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# TEXAS REGISTER

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*Felicia Mora  
10th Grade*

School children's artwork is used to decorate the front cover and blank filler pages of the *Texas Register*. Teachers throughout the state submit the drawings for students in grades K-12. The drawings dress up the otherwise gray pages of the *Texas Register* and introduce students to this obscure but important facet of state government.

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# THE ATTORNEY GENERAL

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Requests for Opinions, Opinions, Open Records Decisions.

An index to the full text of these documents is available from  
the Attorney General's Internet site <http://www.oag.state.tx.us>.

Telephone: 512-936-1730. 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: <http://www.oag.state.tx.us/opinopen/opinhome.shtml>.)

## Request for Opinions

**RQ-0798-GA**

### Requestor:

The Honorable Mark Homer

Chair, Committee on Culture, Recreation & Tourism

Texas House of Representatives

P.O. Box 2910

Austin, Texas 78768-2910

Re: Authority of a city to re-acquire extraterritorial jurisdiction that it previously relinquished pursuant to chapter 42 of the Local Government Code (RQ-0798-GA)

### Briefs requested by June 29, 2009

**RQ-0799-GA**

### Requestor:

Colonel Lamar Beckworth, Interim Director

Texas Department of Public Safety

5805 North Lamar Boulevard

Austin, Texas 78752-4431

Re: Whether a county's disclosure on its website of driver license photographs received from the Department of Public Safety would violate the Motor Vehicle Records Disclosure Act or the Driver Privacy Protection Act (RQ-0799-GA)

### Briefs requested by July 3, 2009

*For further information, please access the website at [www.oag.state.tx.us](http://www.oag.state.tx.us) or call the Opinion Committee at (512) 463-2110.*

TRD-200902211

Stacey Napier

Deputy Attorney General

Office of the Attorney General

Filed: June 3, 2009



## Opinions

**Opinion No. GA-0716**

The Honorable Armando R. Villalobos

Cameron County District and County Attorney

Cameron County Courthouse

974 East Harrison Street

Brownsville, Texas 78520

Re: Whether an assistant county or assistant district attorney may lawfully and ethically practice as a criminal defense attorney in federal court and in the state courts of a neighboring county (RQ-0754-GA)

## S U M M A R Y

Article 2.08 of the Code of Criminal Procedure does not prohibit an assistant county or assistant district attorney from practicing as a criminal defense attorney in federal court or in the state courts of a neighboring county, although, under certain circumstances, section 46.005 of the Government Code bars such practice by an assistant county attorney. Rules 1.06 and 1.10 of the Texas Disciplinary Rules of Professional Conduct caution against any such representation of a private client, although such inquiries must ultimately be addressed to the Committee on Professional Ethics.

### Opinion No. GA-0717

The Honorable Kenda Culpepper

Rockwall County Criminal District Attorney

Rockwall Government Center

1101 Ridge Road, Suite 105

Rockwall, Texas 75087

Re: Validity of a city charter provision that permits a majority of council members to call a special meeting (RQ-0763-GA)

## S U M M A R Y

We cannot conclude, as a matter of law, that a charter provision of the City of Rockwall permitting a majority of members of the city council to call a special meeting violates the Open Meetings Act on its face.

### Opinion No. GA-0718

The Honorable Don Allee

Kendall County Attorney

Kendall County Courthouse

201 East San Antonio Street, Suite 306

Boerne, Texas 78006-2050

Re: Authority of justice of the peace and county court at law to cause the amendment of a death certificate concerning the cause of death (RQ-0764-GA)

**S U M M A R Y**

A justice of the peace's decisions in carrying out discretionary duties under chapter 49 of the Code of Criminal Procedure are subject to an abuse of discretion standard and, in the proper case, a writ of mandamus may issue to correct a clear abuse of discretion. Whether a county court at law has jurisdiction to issue an order to the Texas Department of State Health Services, Vital Statistics Unit, cannot be determined without reference to the pleadings and proceedings in the particular case. It is unlikely that a court order that is not directed to a justice of the peace could be enforced against the justice of the peace.

**Opinion No. GA-0719**

The Honorable Mike Jackson  
Chair, Committee on Nominations  
Texas State Senate  
Post Office Box 12068  
Austin, Texas 78711

Re: Whether an attorney who acts as an unpaid advisor to the board of trustees of an independent school district may also represent the district for compensation in the collection of delinquent taxes (RQ-0767-GA)

**S U M M A R Y**

The attorney's services to the Pasadena Independent School District as an unpaid advisor and collector of delinquent taxes do not appear, in this instance, to implicate laws pertaining to dual office holding, the common-law doctrine of incompatibility, or the general conflict of interest provisions contained in chapter 171 of the Local Government Code.

However, the provision of free legal services to a school district by an attorney under or in conjunction with a contract for the collection of delinquent taxes may contravene Tax Code section 33.07. Whether a donation of legal services by an attorney under a particular contract violates section 33.07 is a question of fact not appropriate for the attorney general opinion process.

The Texas Disciplinary Rules of Professional Conduct also may need to be considered in relation to the attorney's services to the school district. Questions about any potential conflicts of interest arising from the attorney's conduct must be addressed by the Committee on Professional Ethics.

**Opinion No. GA-0720**

Mr. Charles G. Cooper  
Banking Commissioner  
Texas Department of Banking  
2601 North Lamar Boulevard  
Austin, Texas 78705

Re: Whether an agent under a statutory durable power of attorney may alter the method of disposition of a person's body previously specified by that person in a prepaid funeral contract (RQ-0768-GA)

**S U M M A R Y**

Where an individual specifies the method of disposition of his or her remains in a fully paid funeral contract of which he or she is the purchaser and beneficiary, the individual's agent under a statutory durable power of attorney may not change the method of disposition. If the agent under a statutory durable power of attorney cancels a prepaid funeral contract purchased by the principal for him or herself, the principal's written directive in the contract regarding disposition of his or her remains is not canceled.

*For further information, please access the website at [www.oag.state.tx.us](http://www.oag.state.tx.us) or call the Opinion Committee at (512) 463-2110.*

TRD-200902207  
Stacey Napier  
Deputy Attorney General  
Office of the Attorney General  
Filed: June 3, 2009





# EMERGENCY RULES

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). 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 22. EXAMINING BOARDS

### PART 23. TEXAS REAL ESTATE COMMISSION

#### CHAPTER 535. GENERAL PROVISIONS SUBCHAPTER E. REQUIREMENTS FOR LICENSURE

##### 22 TAC §535.51

The Texas Real Estate Commission (TREC) adopts on an emergency basis revisions to §535.51 concerning General Requirements and adopts by reference three revised forms. The amendments are adopted on an emergency basis to comply with new legislation that included revisions to Texas Occupations Code Chapter 1101 during the 81st Legislative Session, Regular Session (RS), by Senate Bill (SB) 862. The effective date of SB 862 is May 11, 2007. The adoption of the amendments permits TREC to comply with the effective date required by the bill. The amendments adopt by reference revised forms to reflect increased fees to be paid to the Real Estate Research Center at Texas A&M University for three application types for a salesperson license as SB 862 provides for such increase in fees.

The emergency amendment to the rule is adopted under Texas Occupations Code, §1101.151, which authorizes the Texas Real Estate Commission to make and enforce all rules and regulations necessary for the performance of its duties and to establish standards of conduct and ethics for its licensees in keeping with the purpose and intent of the Act to insure compliance with the provisions of the Act.

The statutes affected by this emergency adoption are Texas Occupations Code, Chapters 1101 and 1102, and Senate Bill 862, 81st Legislature, RS. No other statute, code or article is affected by the adopted amendments.

##### §535.51. General Requirements.

(a) - (d) (No change.)

(e) The commission adopts by reference the following forms approved by the commission which are published by and available from the Texas Real Estate Commission, P.O. Box 12188, Austin, Texas 78711-2188:

(1) - (4) (No change.)

(5) Application for Real Estate Salesperson License, TREC Form SL-13 [~~4~~];

(6) Application for Late Renewal of Real Estate Salesperson License, TREC Form SLR-11 [~~4~~];

(7) - (8) (No change.)

(9) Application of Currently Licensed Real Estate Broker for Salesperson License, TREC Form BSL-8 [~~7~~]; and

(10) (No change.)

This agency hereby certifies that the emergency adoption has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902180

Loretta R. DeHay

Interim Administrator and General Counsel

Texas Real Estate Commission

Effective Date: June 2, 2009

Expiration Date: September 29, 2009

For further information, please call: (512) 465-3900



# PROPOSED RULES

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 16. ECONOMIC REGULATION

### PART 2. PUBLIC UTILITY COMMISSION OF TEXAS

#### CHAPTER 22. PROCEDURAL RULES

The Public Utility Commission of Texas (commission) proposes amendments to §22.52, relating to Notice in Licensing Proceedings; §22.75, relating to Examination and Correction of Pleadings and Documents; and §22.104, relating to Motions to Intervene. The proposed amendments will facilitate the processing of applications to grant or amend electric certificates of convenience and necessity (CCNs). Project Number 36987 is assigned to this proceeding.

Andres Medrano, Attorney, Legal Division, has determined that for each year of the first five-year period the proposed amendments are in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the amended rules.

Mr. Medrano has determined that for each year of the first five years the proposed amendments are in effect the public benefit anticipated as a result of enforcing the amended rules will be more efficient electric CCN proceedings. The proposed amendments include a reduction in the number of times notice of a CCN proceeding is published from two times to one time. Because notice of the proceeding is mailed to affected persons under §22.52, the commission believes that it is appropriate to limit newspaper notice to one-time publication. In addition, the proposed amendments include a reduction of the intervention period from 45 to 30 days for an application for certificate of convenience and necessity filed pursuant to an order issued pursuant to Public Utility Regulatory Act (PURA) §39.203(e). PURA §39.203(e) imposes a compressed schedule for an application filed pursuant to that section; it requires that the commission issue a final order before the 181st day after the application is filed with the commission, compared to the one-year deadline contemplated by PURA §37.057 for all other electric transmission CCN proceedings. Also because of the 180-day deadline under PURA §39.203(e), the rule amendments require that the presiding officer dismiss without prejudice (rather than permit an amendment) an application that contains a material deficiency if the application is filed pursuant to an order issued pursuant to PURA §39.203(e). The amendments will probably result in a net reduction of economic costs to persons required to comply with the amendments. The amendments will reduce an applicant's costs by required newspaper notice once rather than twice. The amendments will require an applicant whose application is dismissed to reapply and provide notice of the second application, but that cost can be avoided if the applicant does

not file an application with a material deficiency. The amendment concerning dismissal of an application is unlikely to affect a small business or micro-business, because the amendment applies only to applications filed pursuant to an order issued pursuant to PURA §39.203(e). In addition, because of the statutorily-imposed 180-day deadline, reducing the adverse effect of the amendment on small businesses and micro-businesses is infeasible.

Mr. Medrano has also determined that for each year of the first five years the proposed amendments are in effect there should be no effect on a local economy, and therefore no local employment impact statement is required under Administrative Procedure Act (APA), Texas Government Code §2001.022.

The commission staff will conduct a public hearing on this rule-making, if requested pursuant to the Administrative Procedure Act, Texas Government Code §2001.029, at the commission's offices located in the William B. Travis Building, 1701 North Congress Avenue, Austin, Texas 78701 on Tuesday, June 30, 2009, beginning at 10:00 a.m. The request for a public hearing must be received within 30 days after publication of the rule.

Initial comments on the proposed amendment may be submitted to the Filing Clerk, Public Utility Commission of Texas, 1701 North Congress Avenue, P.O. Box 13326, Austin, Texas 78711-3326, within 21 days after publication. Reply comments may be submitted within 28 days after publication. Sixteen copies of comments on the amendments are required to be filed pursuant to §22.71(c) of this title. Comments should be organized in a manner consistent with the organization of the proposed amended rules. The commission invites specific comments regarding the costs associated with, and benefits that will be gained by, implementation of the amendments. The commission will consider the costs and benefits in deciding whether to adopt the amendments. All comments should refer to Project Number 36987.

#### SUBCHAPTER D. NOTICE

##### 16 TAC §22.52

This amendment is proposed under PURA, Texas Utilities Code Annotated §14.002 (Vernon 2007 and Supp. 2008), which requires the commission to adopt rules reasonably required in the exercise of its powers and jurisdiction; and specifically, PURA §14.052, which requires the commission to adopt rules governing practice and procedure before the commission and, as applicable, the utility division of the State Office of Administrative Hearing (SOAH); and PURA §39.203(e), which requires that in any CCN proceeding brought under Chapter 37 to construct or enlarge transmission or transmission-related facilities under §39.203(e), the commission shall issue a final order before the 181st day after the date the application is filed.

Cross Reference to Statutes: Public Utility Regulatory Act §§14.002, 14.052, and 39.203(e).

§22.52. *Notice in Licensing Proceedings.*

(a) Notice in electric licensing proceedings. In all electric licensing proceedings except minor boundary changes, the applicant shall give notice in the following ways:

(1) Applicant shall publish notice once of the applicant's intent to secure a certificate of convenience and necessity in a newspaper having general circulation in the county or counties where a certificate of convenience and necessity is being requested, no later than [once each week for two consecutive weeks beginning with] the week after the application is filed with the commission. This notice shall identify the commission's docket number and the style assigned to the case by the Central Records Division. In electric transmission line cases, the applicant shall obtain the docket number and style no earlier than 25 days prior to making the application by filing a preliminary pleading requesting a docket assignment. The notice shall identify in general terms the type of facility if applicable, and the estimated expense associated with the project.

(A) The notice shall include all the information required by the standard format established by the commission for published notice in electric licensing proceedings. The notice shall state the date established for the deadline for intervention in the proceeding (date 45 days after the date the formal application was filed with the commission; or date 30 days after the date the formal application was filed with the commission for an application for certificate of convenience and necessity filed pursuant to the Public Utility Regulatory Act §39.203(e)) and that a letter requesting intervention should be received by the commission by that date.

(B) - (D) (No change.)

(2) - (6) (No change.)

(b) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 22, 2009.

TRD-200902021

Adriana A. Gonzales

Rules Coordinator

Public Utility Commission of Texas

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 936-7223



## SUBCHAPTER E. PLEADINGS AND OTHER DOCUMENTS

### 16 TAC §22.75

This amendment is proposed under PURA, Texas Utilities Code Annotated §14.002 (Vernon 2007 and Supp. 2008), which requires the commission to adopt rules reasonably required in the exercise of its powers and jurisdiction; and specifically, PURA §14.052, which requires the commission to adopt rules governing practice and procedure before the commission and, as applicable, the utility division of the State Office of Administrative Hearing (SOAH); and PURA §39.203(e), which requires that in any CCN proceeding brought under Chapter 37 to construct or enlarge transmission or transmission-related

facilities under §39.203(e), the commission shall issue a final order before the 181st day after the date the application is filed.

Cross Reference to Statutes: Public Utility Regulatory Act §§14.002, 14.052, and 39.203(e).

§22.75. *Examination and Correction of Pleadings and Documents.*

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

(d) Notice of material deficiencies in applications for certificates of convenience and necessity for transmission lines.

(1) - (2) (No change.)

(3) If the presiding officer determines that a material deficiency exists [material deficiencies exist] in an application, the presiding officer shall issue a written order within 35 days of the filing of the application specifying a time within which the applicant shall amend its application and correct the deficiency. Any statutory deadlines shall be calculated based on the date of filing the sufficient application.

(4) If the presiding officer determines that a material deficiency exists in an application of certificate of convenience and necessity filed pursuant to Public Utility Regulatory Act §39.203(e), the presiding officer shall dismiss the application without prejudice.

(e) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 22, 2009.

TRD-200902022

Adriana A. Gonzales

Rules Coordinator

Public Utility Commission of Texas

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 936-7223



## SUBCHAPTER F. PARTIES

### 16 TAC §22.104

This amendment is proposed under PURA, Texas Utilities Code Annotated §14.002 (Vernon 2007 and Supp. 2008), which requires the commission to adopt rules reasonably required in the exercise of its powers and jurisdiction; and specifically, PURA §14.052, which requires the commission to adopt rules governing practice and procedure before the commission and, as applicable, the utility division of the State Office of Administrative Hearing (SOAH); and PURA §39.203(e), which requires that in any CCN proceeding brought under Chapter 37 to construct or enlarge transmission or transmission-related facilities under §39.203(e), the commission shall issue a final order before the 181st day after the date the application is filed.

Cross Reference to Statutes: Public Utility Regulatory Act §§14.002, 14.052, and 39.203(e).

§22.104. *Motions to Intervene.*

(a) (No change.)

(b) Time for filing motion. Motions to intervene shall be filed within 45 days from the date an application is filed with the commission, unless otherwise provided by statute, commission rule, or order of the presiding officer. For an application for certificate of convenience and necessity filed pursuant to Public Utility Regulatory Act

§39.203(e), motions to intervene shall be filed within 30 days from the date the application is filed with the commission. The motion shall be served upon all parties to the proceeding and upon all persons that have pending motions to intervene.

(c) - (d) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 22, 2009.

TRD-200902023

Adriana A. Gonzales

Rules Coordinator

Public Utility Commission of Texas

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 936-7223



## PART 3. TEXAS ALCOHOLIC BEVERAGE COMMISSION

### CHAPTER 31. ADMINISTRATION

The Texas Alcoholic Beverage Commission (commission) proposes the repeal of §31.3 relating to Petition for the Adoption of a Rule and proposes new §31.3, which will replace the repealed section.

The rule was reviewed under Government Code, §2001.039, which requires that each state agency review and consider for readoption each rule adopted by that agency under Government Code, Chapter 2001 (Administrative Procedure Act). The commission has reviewed the rule and has determined that the reasons for adopting the rule continue to exist.

Government Code, §2001.021(b) requires each state agency to adopt a rule to inform the public how to petition the agency to adopt a rule.

The commission has determined that the existing section is outdated and should be repealed and a new updated section adopted to replace the repealed section.

Subsection (a) states the purpose of the rule.

Subsection (b) states the content and requirements of a petition for adoption of a rule.

Subsection (c) states where a petition must be submitted to the commission.

Subsection (d) provides for a review of the petition by the Administrator.

Subsection (e) provides that the commission may accept or deny a petition for rulemaking.

Subsection (f) provides that the commission may refuse to review a petition that has been submitted and denied within the preceding six months.

Charlie Kerr, Chief Financial Officer, has determined that for each year of the first five years that the section will be in effect, there will be no impact on state or local government.

Sherry Cook, Assistant Administrator, has determined that for each year of the first five years the section is in effect, the public will benefit from adoption of the section because it provides the procedure to be followed by the public when petitioning the commission for a rule in compliance with state law.

Mr. Kerr has determined there will be no fiscal or regulatory impact on small or micro-businesses, or persons regulated by the commission. There is no anticipated negative impact on local employment.

Comments on the proposed repeal and proposed new rule may be submitted to Joan Carol Bates, Deputy General Counsel, Texas Alcoholic Beverage Commission, P.O. Box 13127, Austin, Texas 78711, or electronically to joan.bates@tabc.state.tx.us. Comments will be accepted for 30 days following publication of the proposed repeal and new section in the *Texas Register*.

### 16 TAC §31.3

*(Editor's note: The text of the following section proposed for repeal will not be published. The section may be examined in the offices of the Texas Alcoholic Beverage Commission or in the Texas Register office, Room 245, James Earl Rudder Building, 1019 Brazos Street, Austin, Texas.)*

The proposed repeal is authorized by Texas Alcoholic Beverage Code, §5.31, which grants general rulemaking authority to the commission, §2001.021 of the Government Code, which requires the commission to adopt the rule, and §2001.039 of the Government Code, which requires each agency review its rules each four years.

Cross Reference: The proposed repeal and new rule affects Texas Alcoholic Beverage Code, Chapter 5, and Government Code, Chapter 2001.

§31.3. Petition for the Adoption of a Rule.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 26, 2009.

TRD-200902040

Alan Steen

Administrator

Texas Alcoholic Beverage Commission

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 206-3204



### 16 TAC §31.3

The proposed new rule is authorized by Texas Alcoholic Beverage Code, §5.31, which grants general rulemaking authority to the commission, §2001.021 of the Government Code, which requires the commission to adopt the rule, and §2001.039 of the Government Code, which requires each agency review its rules each four years.

Cross Reference: The proposed repeal and new rule affects Texas Alcoholic Beverage Code, Chapter 5, and Government Code, Chapter 2001.

§31.3. Petition for the Adoption of a Rule.

(a) Purpose. This section provides procedures for any interested person (petitioner) to request the Alcoholic Beverage Commission (commission) to adopt a rule.

(b) Content of Petition.

(1) The petition must be in writing. No form is required but all information must be provided, or a reason why required information cannot be provided given.

(2) The petition must contain the following:

(A) petitioner's name, address, and organization or affiliation, if any;

(B) a plain and brief statement about why a rule or change in an existing rule is needed, required, or desirable, including the public good to be served and any affect on those who would be required to comply with the rule;

(C) an estimate of the fiscal impact on state and local government as a result of enforcing or administering the proposed rule, an estimate of the economic impact on persons required to comply with the proposed rule, whether there may be an affect on local employment, and the facts, assumptions and methodology used to prepare estimates and impacts required by this subparagraph;

(D) a statement on the commission's authority to adopt the proposed rule;

(E) the proposed text of a new rule, or proposed changes to an existing rule; and

(F) a list of individuals, organizations or affiliations that may be interested or affected by the proposed rule, if known.

(c) Submission. A petition is submitted on the date it is received by the Administrator. The petition must be addressed to the Administrator, Texas Alcoholic Beverage Commission, and mailed to P.O. Box 13127, Austin, Texas 78711-3127, or hand delivered to the Administrator at commission headquarters in Austin, Texas.

(d) Review. The Administrator will review the petition for compliance with the requirements of this section. If all requirements of this section are met, the Administrator will bring the petition to the commission, or any member of the commission for consideration.

(e) Decision to Deny or Accept. The commission will deny a petition for rulemaking, or accept, in whole or in part, a petition for rulemaking within 60 days from the date the petition is submitted.

(1) The commission will notify the petitioner in writing if the petition is denied and state the reason or reasons for the denial.

(2) The commission will refer an accepted petition to agency staff to initiate the rulemaking process under Chapter 2001, Subchapter B, of the Government Code. Agency staff may redraft the proposed text to conform to style, format and policy decisions of the agency.

(f) Repetitive petitions.

(1) The administrator may refuse to bring a petition for rulemaking to the commission if, within the preceding six months, the commission has considered and denied a previously submitted petition for the same or substantively the same rule.

(2) A subsequent petition for a rule that is the same or substantively similar to a rule that has been accepted will be consolidated into the rulemaking process.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 26, 2009.

TRD-200902041

Alan Steen

Administrator

Texas Alcoholic Beverage Commission

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 206-3204



## TITLE 19. EDUCATION

### PART 1. TEXAS HIGHER EDUCATION COORDINATING BOARD

#### CHAPTER 1. AGENCY ADMINISTRATION SUBCHAPTER A. GENERAL PROVISIONS

##### 19 TAC §1.19

The Texas Higher Education Coordinating Board proposes new §1.19 concerning General Provisions. This new section was adopted on an emergency basis and appeared in the May 15, 2009, issue of the *Texas Register* (34 TexReg 2862). Specifically, the new section would establish procedures concerning professional development through education and training for agency's administrators and employees. In order for an agency to provide training and education to its employees, it must adopt rules allowing same. Section 656.048 of the Government Code directs that: "(a) A state agency shall adopt rules relating to: (1) the eligibility of the agency's administrators and employees for training and education supported by the agency; and (2) the obligations assumed by the administrators and employees on receiving the training and education."

Dr. Arturo Alonzo, Deputy Commissioner, has determined that for each year of the first five years the new section is in effect, there will be no fiscal implications to state or local government as a result of enforcing or administering the rules.

Dr. Alonzo has also determined that for each year of the first five years the new section is in effect, the public benefit anticipated as a result of this change will be that staff will be allowed to continue with professional development through education and training. There are no anticipated economic costs to persons who are required to comply with the section as proposed. There is no impact on local employment.

Comments on the proposal may be submitted to Dr. Arturo Alonzo, P.O. Box 12788, Austin, Texas 78711, (512) 427-6143, or [arturo.alonzo@theceb.state.tx.us](mailto:arturo.alonzo@theceb.state.tx.us). Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The new section is proposed under the Texas Education Code, §61.027, which provides the Coordinating Board with general rulemaking authority, and Article III of the General Appropriations Act of the 80th Texas Legislature.

The new section affects the Texas Education Code, §61.027.

§1.19. Education and Training of Board Administrators and Employees.

The Texas Higher Education Coordinating Board values its administrators and employees and encourages lifelong learning and professional development through education and training pursuant to the State Employees Training Act, Texas Government Code §§656.041 - 656.104 and successor sections. The eligibility of the agency's administrators and employees for training and education provided by the agency, and the obligations, including restrictions and potential liability, assumed by administrators and employees on receiving such training and education, shall be as set forth in the Board's policies.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902068

Bill Franz

General Counsel

Texas Higher Education Coordinating Board

Proposed date of adoption: July 30, 2009

For further information, please call: (512) 427-6114



## CHAPTER 17. RESOURCE PLANNING SUBCHAPTER B. BOARD APPROVAL

### 19 TAC §17.11, §17.14

The Texas Higher Education Coordinating Board proposes amendments to §17.11(1) and (2), concerning projects exempt from Board approval, and §17.14(c), concerning re-approval of projects. Specifically, in compliance with Senate Bill 1796, 81st Texas Legislature, the proposed amendments increase the threshold for projects that are exempt from Board approval to \$4 million for both new construction and repair and renovation projects. In addition the amendments exempt projects previously approved by the Board under \$4 million from having to seek re-approval as required by §17.14(a).

Ms. Susan Brown, Assistant Commissioner, Planning and Accountability, has determined that for each year of the first five years the amended sections are in effect, there will not be any fiscal implications to state or local government as a result of enforcing or administering the rules.

Ms. Brown has also determined that for each year of the first five years the amended sections are in effect, the public benefit anticipated as a result of administering the sections will be more efficient Board operations relating to institution facility project approvals. There is no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the sections as proposed. There is no impact on local employment.

Comments on the proposal may be submitted to Gary W. Johnstone, Deputy Assistant Commissioner, Planning and Accountability, 1200 East Anderson Lane, Austin, Texas 78752 or gary.johnstone@thehb.state.tx.us. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The amendments are proposed under the Texas Education Code, §61.058(a).

The amendments affect Texas Education Code, §61.058.

*§17.11. Projects Exempt from Board Approval.*

The following types of projects are exempt from Board approval:

(1) New construction projects costing less than \$4 million [\$1 million];

(2) Repair and renovation projects costing less than \$4 million [\$2 million];

(3) - (9) (No change.)

*§17.14. Re-approval of Projects.*

(a) - (b) (No change.)

(c) Projects approved prior to September 1, 2009, are exempt from the provisions of subsection (a) of this section if the new project cost does not exceed the amounts specified in §17.11(1) and/or (2) of this title (relating to Projects Exempt from Board Approval).

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902094

Bill Franz

General Counsel

Texas Higher Education Coordinating Board

Proposed date of adoption: July 30, 2009

For further information, please call: (512) 427-6114



## PART 2. TEXAS EDUCATION AGENCY

### CHAPTER 127. TEXAS ESSENTIAL KNOWLEDGE AND SKILLS FOR CAREER DEVELOPMENT

The State Board of Education (SBOE) proposes amendments to §127.1 and §127.11 and new §§127.3, 127.4, and 127.13-127.15, concerning the Texas essential knowledge and skills (TEKS) for career development. The sections establish the TEKS for career orientation courses in middle school and high school. The proposal would revise the TEKS based on recommendations of the career and technical education (CTE) review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future

meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. After the November 2008 meeting, the SBOE received draft recommendations for proposed revisions to the career orientation TEKS. A discussion item regarding the proposed revisions to 19 TAC Chapter 127, Texas Essential Knowledge and Skills for Career Orientation, Subchapter A, Middle School, and Subchapter B, High School, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009, including changes made in response to questions raised by SBOE committee members during the March 2009 meeting.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 127, Texas Essential Knowledge and Skills for Career Orientation, Subchapter A, Middle School, and Subchapter B, High School, on May 20, 2009. At the May 22, 2009, meeting, the SBOE approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the amendments and new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the amendments and new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the amendments and new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed amendments and new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

## SUBCHAPTER A. MIDDLE SCHOOL

### 19 TAC §§127.1, 127.3, 127.4

The amendment and new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; and §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d).

The amendment and new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, and 28.0022.

*§127.1. Implementation of Texas Essential Knowledge and Skills for Career Development [Orientation], Middle School.*

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year, with the exception of §127.2 of this title (relating to Career Investigations). Section 127.2 of this title was implemented [supersede §75.50(e) of this title (relating to Career Investigation) beginning] September 1, 1998, and will be superseded by §127.3 and §127.4 beginning with the 2010-2011 school year.

*§127.3. Exploring Careers.*

(a) General requirements. This course is recommended for students in Grades 7-8.

(b) Introduction. The career development process is unique to every person and evolves throughout one's life. Students will use decision-making and problem-solving skills for college and career planning. Students will explore valid, reliable educational and career information to learn more about themselves and their interests and abilities. Students integrate skills from academic subjects, information technology, and interpersonal communication to make informed decisions. This course is designed to guide students through the process of investigation and in the development of a college and career achievement plan. Students will use interest inventory software or other tools to explore areas of personal interest. Students will use this information to explore educational requirements for a variety of chosen career paths. Districts have the flexibility of offering career exploration knowledge and skills in a variety of instructional arrangements.

(c) Knowledge and skills.

(1) The student explores personal interests and aptitudes as they relate to education and career planning. The student is expected to:

(A) complete, discuss, and analyze the results of personality, career interest, and aptitude assessments;

(B) explore the career clusters as defined by the U.S. Department of Education;

- (C) summarize the career opportunities in a cluster of personal interest;
  - (D) research current and emerging fields related to personal interest areas;
  - (E) determine academic requirements in career fields related to personal interest areas;
  - (F) explore how career choices impact the balance between personal and professional responsibilities; and
  - (G) research educational options and requirements using appropriate technology.
- (2) The student analyzes personal interests and aptitudes regarding education and career planning. The student is expected to:
- (A) create a personal career portfolio;
  - (B) make oral presentations that fulfill specific purposes using appropriate technology;
  - (C) develop and analyze tables, charts, and graphs related to career interests;
  - (D) determine the impact of technology on careers of personal interest; and
  - (E) identify entrepreneurial opportunities within a field of personal interest.
- (3) The student analyzes college and career opportunities. The student is expected to:
- (A) determine academic requirements for transition from one learning level to the next;
  - (B) explore opportunities for earning college credit in high school such as advanced placement courses, International Baccalaureate courses, dual credit, and local and statewide articulated credit;
  - (C) develop an awareness of financial aid, scholarships, and other sources of income to support postsecondary education;
  - (D) discuss the impact of effective college and career planning;
  - (E) demonstrate decision-making skills related to school and community issues, programs of study, and career planning; and
  - (F) identify how performance on assessments such as the SAT®, ACT®, ASVAB®, and ACCUPLACER® impact personal academic and career goals.
- (4) The student evaluates skills for personal success. The student is expected to:
- (A) implement effective study skills for academic success;
  - (B) use interpersonal skills to facilitate effective teamwork;
  - (C) use a problem-solving model and critical-thinking skills to make informed decisions;
  - (D) use effective time-management and goal-setting strategies;
  - (E) effectively use information and communication technology tools; and

- (F) identify skills that can be transferable among a variety of careers.
- (5) The student recognizes the impact of career choice on personal lifestyle. The student is expected to:
- (A) prepare a personal budget reflecting the student's desired lifestyle;
  - (B) use appropriate resources to compare and contrast salaries and educational requirements of at least three careers in the student's interest area; and
  - (C) evaluate at least three career interests based on budget and salary expectations.
- (6) The student demonstrates an understanding of personal financial management. The student is expected to:
- (A) compare the advantages and disadvantages of different types of banking services;
  - (B) simulate opening and maintaining different types of bank accounts;
  - (C) simulate different methods of withdrawals and deposits; and
  - (D) reconcile bank statements, including fees and services.
- (7) The student develops skills for professional success. The student is expected to:
- (A) demonstrate effective verbal, nonverbal, written, and electronic communication skills;
  - (B) evaluate the impact of positive and negative personal choices, including use of electronic communications such as social networking sites;
  - (C) model characteristics of effective leadership, teamwork, and conflict management;
  - (D) recognize the importance of a healthy lifestyle, including the ability to manage stress;
  - (E) explore and model characteristics necessary for professional success such as work ethics, integrity, dedication, perseverance, and the ability to interact with a diverse population; and
  - (F) complete activities using project- and time-management techniques.
- (8) The student identifies and explores technical skills essential to careers in multiple occupations, including those that are high skill, high wage, or high demand. The student is expected to:
- (A) complete actual or virtual labs to simulate the technical skills required in various occupations; and
  - (B) analyze the relationship between various occupations such as the relationship between interior design, architectural design, manufacturing, and construction on the industry of home building or the multiple occupations required for hospital administration.
- §127.4. Career Portals.
- (a) General requirements. This course is recommended for students in Grades 7-8.
  - (b) Introduction. The goal of this course is to create a culture of high expectation and continuous improvement that provides middle school students with a foundation for success in high school, future studies, and careers. Students explore college and career planning within specific career cluster(s). The students research labor market in-



formation, learn job-seeking skills, and create documents required for employment. Students use self-knowledge to explore and set realistic goals. Districts have the flexibility of offering career exploration knowledge and skills in a variety of instructional arrangements.

(c) Knowledge and skills.

(1) The student explores one or more career clusters of interest. The student is expected to:

(A) identify the various career opportunities within one or more career clusters; and

(B) identify the pathways within one or more career clusters.

(2) The student explores pathways of interest within one or more career clusters. The student is expected to:

(A) investigate career opportunities within the pathways;

(B) explore careers of personal interest;

(C) research the academic requirements for careers of personal interest;

(D) research the certification or educational requirements for careers of personal interest; and

(E) describe the technical-skill requirements for careers of personal interest.

(3) The student explores programs of study. The student is expected to:

(A) compare levels of education for careers of personal interest;

(B) identify the academic and technical skills needed; and

(C) develop a personal program of study for at least one career.

(4) The student explores the professional skills needed for college and career success. The student is expected to:

(A) articulate the importance of strong academic skills to meet personal academic and career goals;

(B) explore the importance of curricular, extracurricular, career preparation, and extended learning experiences;

(C) develop a personal six- or eight-year achievement plan that incorporates rigorous academic and relevant enrichment courses;

(D) explore the steps required to participate in a variety of career and educational opportunities, including, but not limited to, entry-level employment, military service, apprenticeships, community and technical colleges, and universities;

(E) identify professional associations affiliated with a specified program of study;

(F) employ effective leadership, teamwork, and conflict management;

(G) recognize the value of community service and volunteerism; and

(H) demonstrate characteristics required for personal and professional success, including work ethics, integrity, dedication, perseverance, and the ability to interact with a diverse population.

(5) The student understands personal financial management and recognizes the value of personal fiscal responsibility. The student is expected to:

(A) compare and contrast different types of banking services;

(B) open and maintain different types of simulated bank accounts;

(C) practice different methods of withdrawing and depositing funds;

(D) reconcile bank statements, including fees and services;

(E) compare and contrast forms of credit, including credit cards and debit cards;

(F) list the qualifications and procedures to obtain and improve credit scores;

(G) discuss the impact of identity theft on credit; and

(H) examine the effects of poor credit scores as they relate to personal finance and career opportunities.

(6) The student explores labor market information. The student is expected to:

(A) analyze national, state, regional, and local labor market information;

(B) cite evidence of high-skill, high-wage, or high-demand occupations based on analysis of labor market information; and

(C) analyze the effects of changing employment trends, societal needs, and economic conditions on career planning.

(7) The student explores job-seeking skills. The student is expected to:

(A) identify the steps for an effective job search;

(B) describe appropriate appearance for an interview; and

(C) participate in a mock interview.

(8) The student creates professional documents required for employment. The student is expected to:

(A) develop a resumé;

(B) write appropriate business correspondence such as a letter of intent and a thank you letter;

(C) complete sample job applications; and

(D) explain protocol for use of references.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

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For further information, please call: (512) 475-1497



## SUBCHAPTER B. HIGH SCHOOL

### 19 TAC §§127.11, 127.13 - 127.15

The amendment and new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The amendment and new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

*§127.11. Implementation of Texas Essential Knowledge and Skills for Career Development [Orientation], High School.*

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year, with the exception of §127.12 of this title (relating to Career Connections (One-Half Credit)). Section 127.12 of this title was implemented [effective] September 1, 1998, and will be superseded by §§127.13-127.15 beginning with the 2010-2011 school year.

*§127.13. Career Preparation I (Two to Three Credits).*

(a) General requirements. This course is recommended for students in Grades 11-12.

(b) Introduction. Career Preparation I provides opportunities for students to participate in a learning experience that combines classroom instruction with paid business and industry employment experiences and supports strong partnerships among school, business, and community stakeholders. The goal is to prepare students with a variety of skills for a fast-changing workplace. This instructional arrangement should be an advanced component of a student's individual program of study. Students are taught employability skills, which include job-specific skills applicable to their training station, job interview techniques, communication skills, financial and budget activities, human relations, and portfolio development. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.

(c) 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) develop a personal resumé;

(D) complete job search documents, including job applications and I-9 and W-4 forms;

(E) demonstrate proper interview techniques in various situations; and

(F) create and complete appropriate documents such as electronic portfolio, employment application, letter of intent, and thank you letters.

(2) The student develops skills for success in the workplace. The student is expected to:

(A) identify and model appropriate grooming and appearance for the workplace;

(B) demonstrate dependability, punctuality, and initiative;

(C) research positive interpersonal skills, including respect for diversity;

(D) model appropriate business and personal etiquette in the workplace;

(E) exhibit productive work habits, ethical practices, and a positive attitude;

(F) demonstrate the ability to work with the other employees to support the organization and complete assigned tasks;

(G) identify how to prioritize work to fulfill responsibilities and meet deadlines;

(H) evaluate the relationship of good physical and mental health to job success and personal achievement; and

(I) demonstrate effective methods to secure, maintain, and terminate employment.

(3) The student applies work ethics, employer expectations and interactions with diverse populations, and communication skills in the workplace. The student is expected to:

(A) illustrate how personal integrity affects human relations on the job;

(B) research characteristics of successful working relationships such as teamwork, conflict resolution, self-control, and ability to accept criticism;

(C) analyze employer expectations;

(D) demonstrate respect for the rights of others;

(E) develop listening skills;

(F) apply effective listening skills used in the workplace;

(G) identify ethical standards; and

(H) comply with organizational policies and procedures.

(4) The student applies academic skills to job skills. The student is expected to:

(A) apply mathematical skills to business transactions;

(B) develop a personal budget based on a career choice;

(C) interpret data from tables, charts, and graphs to estimate and find solutions to problems; and

(D) organize, write, and compile workplace business documents.

(5) The student applies ethical behavior standards and legal responsibilities within the workplace. The student is expected to:

(A) research and compare published workplace policies and procedures;

(B) demonstrate 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 describe laws related to different careers.

(6) The student applies the use of self-development techniques and interpersonal skills to accomplish objectives. The student is expected to:

(A) identify and practice effective interpersonal and team-building skills with coworkers, managers, and customers; and

(B) develop effective leadership skills through participation in activities such as career and technical student organizations.

(7) The student applies concepts and skills related to safety at the workplace. The student is expected to:

(A) identify and apply safe working practices related to training station;

(B) demonstrate knowledge of personal and occupational safety practices in the workplace;

(C) offer solutions related to unsafe work practices and attitudes;

(D) explain Occupational Safety and Health Administration regulations in the workplace; and

(E) determine health and wellness practices that influence job performance.

(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 occupational area;

(C) compare rewards and demands for various levels of employment in a variety of careers;

(D) evaluate strategies for career retention and advancement in response to the changing global workplace;

(E) summarize the rights and responsibilities of employers and employees; and

(F) 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 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; and

(D) determine continuing education opportunities that enhance career advancement and promote lifelong learning.

§127.14. Career Preparation II (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grade 12. Recommended prerequisite: Career Preparation I.

(b) Introduction. Career Preparation II develops essential knowledge and skills through classroom technical instruction and on-the-job training in an approved business and industry training area. Students will develop skills for lifelong learning, employability, leadership, management, work ethics, safety, and communication as a group; however, each student will have an individual training plan that will address job-specific knowledge and skills. Approved training sponsors will provide paid occupational training for a student. The training sponsor will assist the teacher in providing the necessary knowledge and skills for the student's specific career preparation.

(c) Knowledge and skills.

(1) The student uses and evaluates employability skills to maintain a position in a company. The student is expected to:

(A) create a professional electronic portfolio, including a two- to four-year individual career plan of study, resumé, cover letter, awards, commendations, and thank you letters;

(B) obtain letters of recommendation;

(C) expand personal communication skills; and

(D) refine interview skills.

(2) The student develops advanced knowledge and skills associated with success in the workplace. The student is expected to:

(A) maintain appropriate grooming and appearance for the workplace;

(B) demonstrate positive interpersonal skills, including respect for diversity;

(C) demonstrate appropriate business and personal etiquette in the workplace;

(D) exhibit productive work habits, attitudes, and ethical practices;

(E) evaluate consequences for breach of personal and occupational safety practices in the workplace; and

(F) prioritize work to fulfill responsibilities and meet deadlines.

(3) The student applies work ethics, job expectations, multicultural considerations, and communication skills in the workplace. The student is expected to:

(A) evaluate personal integrity and its effects on human relations in the workplace;

(B) evaluate characteristics of successful working relationships such as teamwork, conflict resolution, self-control, and the ability to accept criticism;

(C) recognize and appreciate diversity in the workplace;

(D) analyze employer expectations;

(E) exhibit productive work habits and attitudes;

(F) communicate effectively to a variety of audiences;

(G) analyze ethical standards; and

(H) comply with organizational policies and procedures.

(4) The student applies academic knowledge and skills in the workplace. The student is expected to:

(A) apply critical- and creative-thinking skills to solve complex problems;

(B) integrate mathematical concepts into business transactions;

(C) analyze and apply data from tables, charts, and graphs to find solutions to problems;

(D) apply effective listening skills used in the workplace;

(E) read and write technical reports and summaries; and

(F) apply effective verbal, nonverbal, written, and electronic communication skills.

(5) The student recognizes legal responsibilities of the workplace. The student is expected to:

(A) evaluate provisions of the Fair Labor Standards Act;

(B) analyze the legal consequences of breach of confidentiality; and

(C) research and describe laws governing the different professions.

(6) The student recognizes the dangers of identity theft. The student is expected to:

(A) identify various methods criminals use to obtain information; and

(B) research how to avoid becoming a victim.

(7) The student applies the use of self-development techniques and interpersonal skills to improve personal development. The student is expected to:

(A) evaluate effective interpersonal and team-building skills involving situations with coworkers, managers, and customers; and

(B) participate in leadership and career-development activities.

(8) The student recognizes knowledge and skills related to safety in the workplace. The student is expected to:

(A) apply safe working practices to training station;

(B) evaluate unsafe work practices and attitudes;

(C) evaluate the impact of Occupational Safety and Health Administration regulations in the workplace;

(D) recognize the importance of applying safety rules in all situations; and

(E) analyze health and wellness practices that influence job performance.

(9) The student acquires the academic and technical skills for future education and employment in high-skill, high-wage, or high-demand occupations. The student is expected to:

(A) research and identify current or emerging occupations;

(B) analyze future employment outlook;

(C) research entrepreneurial opportunities;

(D) analyze rewards and demands for various levels of employment;

(E) identify the academic and technical entry requirements for employment in various high-skill, high-wage, or high-demand occupations;

(F) identify and pursue opportunities, available in high school and post secondary, to acquire the necessary academic and technical skills for employment in high-skill, high-wage, or high-demand occupations;

(G) evaluate the rights and responsibilities of employers and employees; and

(H) apply money-management and financial-planning techniques.

(10) The student identifies skills and attributes necessary for professional advancement. The student is expected to:

(A) evaluate and compare employment options such as salaries, benefits, and prerequisites;

(B) compare rewards and demands for various levels of employment in a variety of careers;

(C) determine continuing education opportunities that enhance career advancement and promote lifelong learning;

(D) determine preparation requirements for levels of employment in a variety of careers;

(E) determine interests, abilities, personal priorities, and family responsibilities affecting career choice; and

(F) demonstrate effective methods to secure, maintain, and terminate employment.

§127.15. Problems and Solutions (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 11-12.

(b) Introduction. Problems and Solutions is a project-based research course for students who have the ability to research a real-world problem. Students develop a project on a topic related to career interests, use scientific methods of investigation to conduct in-depth research, are matched with a mentor from the business or professional community, compile findings, and present their findings to an audience that includes experts in the field. To attain academic success, students must have opportunities to learn, reinforce, apply, and transfer their knowledge, skills, and technologies in a variety of settings. This course is designed to provide students an opportunity to earn one advanced measure for the Distinguished Achievement Program.

(c) Knowledge and skills.

(1) The student applies mathematics, science, English language arts, and social studies in independent study. The student is expected to:

(A) select an original independent study project for personal enrichment and professional development;

(B) use reading and research skills to investigate self-selected topics and compile a research portfolio;

(C) collaborate with an interdisciplinary team to develop a project;

(D) identify community, state, national, or international issues to select a project;

(E) conduct a project under the supervision of a mentor;

(F) use scientific methods of investigation;

(G) apply statistical concepts to analyze data, evaluate results, and draw conclusions;

(H) compare and contrast findings in a coherent and organized manner; and

(I) present the independent research project to an appropriate audience of experts in the field using a variety of technologies.

(2) The student uses verbal and nonverbal communication skills. The student is expected to:

(A) listen actively and effectively in group discussions;

(B) use a variety of resources to access, process, and collect data relevant to the project; and

(C) document the time and cost to accomplish the project goal.

(3) The student demonstrates professional ethical behavior standards and legal responsibilities. The student is expected to:

(A) analyze ethical challenges posed by factors such as cost containment, new and emerging technologies, and allocation of limited resources; and

(B) review legal issues related to the research project.

(4) The student designs and develops a research project related to their career interests. The student is expected to:

(A) identify processes to be used in the independent research project; and

(B) use resources to complete a project.

(5) The student uses technology needed to complete a research project. The student is expected to:

(A) use search engines, databases, and other digital electronic tools effectively to locate information;

(B) evaluate quality, accuracy, completeness, reliability, and currency of information from any source;

(C) prepare, organize, and present independent research, mentor experiences, and processes;

(D) accept constructive criticism and revise personal views when valid evidence warrants; and

(E) prepare and present scientific/technical information in appropriate formats to a panel of experts in the field of the research project.

(6) The student evaluates the original research project. The student is expected to:

(A) create weekly progress reports that address time management and goal setting;

(B) meet periodically with the teacher for conferences about progress, concerns, successes, and needs;

(C) conduct self-evaluations of speech presentations;

(D) compose written reflections regarding strengths and weaknesses as well as areas of growth;

(E) analyze the feedback from the panel of experts; and

(F) submit project results and analysis to mentors and experts.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

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For further information, please call: (512) 475-1497



## CHAPTER 130. TEXAS ESSENTIAL KNOWLEDGE AND SKILLS FOR CAREER AND TECHNICAL EDUCATION

### SUBCHAPTER A. AGRICULTURE, FOOD, AND NATURAL RESOURCES

#### 19 TAC §§130.1 - 130.25

The State Board of Education (SBOE) proposes new §§130.1-130.25, concerning the Texas essential knowledge and skills (TEKS) for agriculture, food, and natural resources. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meet-

ing. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section

28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.1. Implementation of Texas Essential Knowledge and Skills for Agriculture, Food, and Natural Resources.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.2. Principles of Agriculture, Food, and Natural Resources (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) Introduction. To be prepared for careers in agriculture, food, and natural resources, students must attain academic skills and knowledge in agriculture. This course allows students to develop knowledge and skills regarding career opportunities, personal development, globalization, industry standards, details, practices, and expectations. To prepare for success, students need to have opportunities to learn, reinforce, experience, apply, and transfer their knowledge and skills in a variety of settings.

(c) Knowledge and skills.

(1) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of agriculture, food, and natural resources, including how to search for and obtain employment, what qualifications are required for varying career fields, and how to advance in a position;

(B) identify careers in agriculture, food, and natural resources with required aptitudes in science, mathematics, language arts, and social studies;

(C) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture, food, and natural resources;

(D) demonstrate knowledge of personal and occupational safety, health, and first-aid policy in the workplace;

(E) develop response plans to emergency situations;  
and

(F) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(2) The student develops a supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agricultural experience;

(C) design and use a customized record-keeping system for the individual supervised agricultural experience;

(D) participate in youth leadership opportunities to create a well-rounded-experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture, food, and natural resources.

(3) The student identifies concepts related to cultural diversity. The student is expected to:

(A) discuss significant similarities and differences in international agriculture;

(B) explain the variety of world markets; and

(C) describe marketing factors and practices that impact other cultures.

(4) The student describes the historical, current, and future significance of the agricultural industry. The student is expected to:

(A) define agriculture;

(B) identify the scope of agriculture and its effect upon society;

(C) identify significant historical and current agriculture, food, and natural resource developments;

(D) identify potential future scenarios for agriculture, food, and natural resource systems;

(E) describe how emerging technologies and globalization impacts agriculture, food, and natural resources; and

(F) compare and contrast issues impacting agriculture, food, and natural resources such as biotechnology, employment, safety, environmental, and animal welfare.

(5) The student analyzes the structure of agricultural leadership in organizations. The student is expected to:

(A) develop premiere leadership skills and collaborate with others to accomplish organizational goals and objectives through the demonstration of characteristics such as empowerment, risk, communication, focusing on results, decision making, problem solving, investment in individuals, resource use and access, service, listening, coaching, developing others, team development, understanding and appreciating others, enthusiasm, creativity, conviction, mission, courage, focus, principles, change, integrity, values, ethics, humility, perseverance, self-discipline, responsibility, community, diversity, global awareness and knowledge, innovation, intuition, adaptation, lifelong learning, and coachability;

(B) develop personal growth skills and collaborate with others to accomplish organizational goals and objectives through the demonstration of characteristics such as attitude, exercise, goal setting, planning, self-discipline, sense of balance, persistence, respect, friendship, integrity, morals, values, etiquette, citizenship, cross-cultural awareness, acceptance of change, respect for differences, decision making, principles, dependability, loyalty, trustworthiness, communication, learning, critical thinking, reasoning, creative thinking, problem solving, self-discovery, coping, friendship, self-reliance, sense of balance, empathy, compassion, ethics, coping, courage, and self-image or worth;

(C) identify opportunities for leadership development and personal growth;

(D) demonstrate democratic principles in conducting effective meetings;

(E) describe team dynamics; and

(F) describe the development of organizational vision, mission, and goals through strategic planning processes.

(6) The student explains agriculture, food, and natural resource systems at the local, state, national, and international levels. The student is expected to:

(A) identify reasons for world trade;

(B) identify the political impact of agriculture, food, and natural resources;

(C) identify the interdependency of agriculture and the environment;

(D) explain ethical stewardship practices that reduce negative impacts of agriculture upon land, air, and water resources;

(E) review regulations and major laws to evaluate their impact on agriculture, food, and natural resources management;

(F) analyze appropriate written material to stay abreast of current issues impacting agriculture, food, and natural resources management;

(G) collect and analyze public opinion and data in order to make informed decisions; and

(H) use critical-thinking skills to identify, organize alternatives, and evaluate public policy issues related to agriculture, food, and natural resources.

(7) The student demonstrates appropriate personal and communication skills. The student is expected to:

(A) describe professional, ethical, and legal responsibilities;

(B) demonstrate 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 in formal and informal situations;

(E) analyze written materials common to the agricultural industry;

(F) demonstrate sound writing and preparation skills for oral presentations, including prepared and extemporaneous presentations; and

(G) demonstrate effective speaking skills.

(8) The student applies appropriate research methods to agriculture, food, and natural resources topics. The student is expected to:

(A) define major research and development fields of agriculture, food, and natural resources;

(B) identify and apply research in the food and fiber products industries;

(C) use a variety of resources for both research and development; and

(D) describe scientific methods of research.

(9) The student applies problem-solving, mathematical, and organizational skills in order to plan and propose supervised agricultural experience programs as well as maintain financial and logistical records. The student is expected to:

(A) develop project proposals by using business strategies which may include identifying learning objectives; describing project logistics, methodologies, and background; forecasting expenses and potential income through budgeting; and planning for major project timeline events through calendar implementation and documentation;

(B) develop and maintain records appropriate to project type following project approval;

(C) maintain appropriate financial records through use and management of appropriate journals, inventories, income and expense logs, financial statements, and balance sheets; and

(D) conduct formative and summative reflective and financial analyses on project learning objectives and records in order to plan for the future.

(10) The student uses information technology tools specific to agriculture, food, and natural resource to access, manage, integrate, and create information. The student is expected to:

(A) identify personal management software, electronic mail applications, and Internet applications;

(B) use word-processing, spreadsheet, and presentation software;

(C) identify collaborative, groupware, and virtual meeting software;

(D) explain the benefits of Geographic Information Systems and Global Positioning Systems; and

(E) recognize other computer-based equipment in agriculture, food, and natural resources.

(11) The student develops technical knowledge and skills related to plant systems. The student is expected to:

(A) identify the components and properties of soils;

(B) describe the process of soil formation;

(C) classify soil formations;

(D) describe the structure and functions of plant parts;

(E) discuss plant germination, growth, and development;

(F) describe plant reproduction, genetics, and breeding;

(G) identify plants of importance to agriculture, food, and natural resources;

(H) identify technological needs for improved capacity in transportation, improved production, increased product quality and operation, and specialized skills specific to plant systems; and

(I) select, maintain, operate, and use tools, equipment, and personal protective equipment common to plant systems.

(12) The student develops technical knowledge and skills related to animal systems. The student is expected to:

(A) describe animal growth and development;

(B) identify animal anatomy and physiology;

(C) identify breeds and classes of livestock; and

(D) discuss animal selection, reproduction, breeding, and genetics.

(13) The student describes the principles of food products and processing systems. The student is expected to:

(A) identify the importance of food products and processing systems;

(B) determine trends in world food production;

(C) identify technological needs for improved capacity in transportation, improved production, increased product quality and operation, and specialized skills specific to food products and processing systems; and

(D) select, maintain, operate, and use tools, equipment, and personal protective equipment common to food products and processing systems.

(14) The student safely performs basic power, structural, and technical system skills in agricultural applications. The student is expected to:

(A) identify major areas of power, structural, and technical systems as well as their impact on world agricultural production;

(B) understand safe and appropriate laboratory procedures and policies;

(C) create proposals that include bill of materials, budget, schedule, drawings, and technical skills developed for basic power, structural, and technical system projects or structures;

(D) identify building materials and fasteners common to power, structural, and technical systems;

(E) use basic tools, skills, and common building materials to construct projects or structures;

(F) select, maintain, operate, and use tools, equipment, and personal protective equipment common to power, structural, and technical systems; and

(G) identify technological needs for improved capacity in transportation, improved production, increased product quality and operation, and specialized skills specific to power, structural, and technical systems.

(15) The student explains the relationship between agriculture and safety, health, and the environment. The student is expected to:

(A) determine the effects of agriculture, food, and natural resources upon safety, health, and the environment;

(B) identify regulations relating to safety, health, and environmental systems in agriculture, food, and natural resources;

(C) describe methods to maintain and improve safety, health, and environmental systems in agriculture, food, and natural resources;

(D) identify alternative energy sources that stem from or impact agriculture, food, and natural resources;

(E) evaluate energy and water conservation methods; and

(F) describe the importance of safety, health, and environmental regulations and procedures in the workplace.

§130.3. Livestock Production (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12.



(b) Introduction. To be prepared for careers in the field of animal science, students need to attain academic skills and knowledge, acquire knowledge and skills related to animal 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 in a variety of settings. Animal species to be addressed in this course may include, but are not limited to, beef cattle, dairy cattle, swine, sheep, goats, and poultry.

(c) Knowledge and skills.

(1) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of animal systems;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in animal systems;

(C) demonstrate knowledge of personal and occupational safety and health practices in the workplace; and

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(2) The student demonstrates technical skills relating to the interrelated human, scientific, and technological dimensions of animal systems. The student is expected to:

(A) assess the importance of the United States impact on world commodity markets;

(B) apply the principles of livestock breeding and nutrition in predicting the impact of current advances in genetics; and

(C) examine the interrelationship of plants and animals.

(3) The student performs technical skills related to livestock production. The student is expected to:

(A) gather performance data;

(B) describe common veterinary procedures and skills;

(C) practice proper animal restraint techniques;

(D) demonstrate identification techniques; and

(E) demonstrate effective management strategies.

(4) The student explains anatomy and physiology related to nutrition, reproduction, health, and management of domesticated animals. The student is expected to:

(A) explain the skeletal, muscular, respiratory, reproductive, and circulatory systems of animals; and

(B) evaluate vital signs and normal behavior.

(5) The student determines nutritional requirements of ruminant and non-ruminant animals, including poultry. The student is expected to:

(A) describe the digestive system;

(B) identify sources of nutrients and classes of feed;

(C) identify vitamins, minerals, and feed additives;

(D) formulate rations; and

(E) discuss feeding practices and feed quality issues.

(6) The student explains animal genetics and reproduction. The student is expected to:

(A) describe the reproductive system;

(B) explain the use of genetics in animal agriculture;

(C) identify systems of animal breeding; and

(D) research current and emerging technologies in animal reproduction.

(7) The student identifies animal pests and diseases. The student is expected to:

(A) describe the role of bacteria, fungi, viruses, genetics, and nutrition in disease; and

(B) identify methods of disease control, treatment, and prevention.

(8) The student knows the factors impacting commodity prices and costs. The student is expected to:

(A) evaluate the relationship between commodity markets;

(B) formulate rations based on least-cost factors; and

(C) design and conduct experiments to support known principles of genetics and feed efficiency.

(9) The student plans for dynamic changes in business operation. The student is expected to:

(A) design, conduct, and complete research to solve self-identified problems; and

(B) use charts, tables, or graphs to prepare written summaries of data obtained in a laboratory activity and an individual scientific research project.

(10) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.4. *Small Animal Management (One-Half to One Credit).*

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) To be prepared for careers in the field of animal science, students need to enhance academic knowledge and skills, acquire knowledge and skills related to animal systems, 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. Suggested small animals which may be

included in the course of study include, but are not limited to, small mammals, amphibians, reptiles, avian, dogs, and cats.

(c) Knowledge and skills.

(1) The student describes the importance of responsible small animal ownership. The student is expected to:

- (A) explain the domestication and use of small animals;
- (B) identify the influence small animals have on society;
- (C) describe the importance of the small animal industry;
- (D) describe the obligations and benefits of small animal ownership; and
- (E) discuss the use and services provided by small animals.

(2) The student learns the hazards associated with working in the small animal industry. The student is expected to:

- (A) explain the importance of safe practices when working with small animals;
- (B) identify diseases that can be transmitted from small animals to humans;
- (C) describe methods of preventing the spread of disease;
- (D) follow guidelines for safety when handling dangerous chemicals and when working with small animals; and
- (E) demonstrate the proper use of laboratory equipment.

(3) The student evaluates current topics in animal rights and animal welfare. The student is expected to:

- (A) compare and contrast animal rights and animal welfare;
- (B) research important persons, organizations, and groups involved in the animal rights movement;
- (C) create a timeline of dates and acts of legislation related to animal welfare; and
- (D) analyze current issues in animal rights and animal welfare.

(4) The student knows the care and management requirements for a variety of small animals. The student is expected to:

- (A) discuss the physical characteristics for each species studied;
- (B) list the breeds or types of each species studied as appropriate;
- (C) discuss the habitat, housing, and equipment needs for each species studied;
- (D) compare and contrast nutritional requirements for each species studied;
- (E) explain health maintenance in each species studied, including the prevention and control of diseases and parasites;
- (F) describe and practice common methods of handling each species studied; and

(G) use available laboratory equipment to perform procedures such as fecal test, blood testing, and basic grooming procedures.

(5) The student examines career opportunities in small animal care. The student is expected to:

- (A) identify, describe, and compare career opportunities in small animal care and management; and
  - (B) describe the nature of the work, salaries, and educational requirements for careers in small animal care.
- (6) The student learns the employability characteristics of a successful employee. The student is expected to:

- (A) identify career development and entrepreneurship opportunities in the field of specialty agricultural enterprises;
- (B) apply competencies related to resources, information, interpersonal skills, and systems of operation in specialty agricultural enterprises;
- (C) demonstrate knowledge of personal and mechanical safety and health practices in the workplace; and
- (D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(7) The student develops a supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

- (A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;
- (B) apply proper record-keeping skills as they relate to a supervised experience;
- (C) design and use a customized record-keeping system for the individual supervised experience;
- (D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and
- (E) produce a challenging approach for a local program of activities in agriculture.

§130.5. Equine Science (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. To be prepared for careers in the field of animal science, students need to enhance academic knowledge and skills, acquire knowledge and skills related to animal systems, 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. Suggested animals which may be included in the course of study include, but are not limited to, horses, donkeys, and mules.

(c) Knowledge and skills.

(1) The student analyzes equine science as it relates to the selection of horses. The student is expected to:

- (A) recognize the importance of the equine industry;
- and

(B) evaluate and select horses.

(2) The student knows how to provide proper nutrition using accepted protocols and processes to maintain animal performance. The student is expected to:

(A) determine nutritional requirements of horses;

(B) describe the anatomy and physiology of horses; and

(C) explain methods of maintaining horse health and soundness.

(3) The student analyzes equine science as it relates to the management of horses. The student is expected to:

(A) select equipment and facilities for horses;

(B) demonstrate methods of handling horses safely; and

(C) identify the procedures for breeding horses.

(4) The student compares and contrasts issues affecting the equine industry. The student is expected to:

(A) describe issues concerning biotechnology related to the equine industry; and

(B) identify animal welfare policy pertaining to the equine industry.

(5) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of equine science;

(B) demonstrate competencies related to resources, information, interpersonal skills, and systems of operation in equine science;

(C) demonstrate knowledge of personal and occupational health and safety practices in the workplace;

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and

(E) access and navigate the Internet for research.

(6) The student develops an improved supervised agricultural experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.6. Veterinary Medical Applications (One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. To be prepared for careers in the field of animal science, students need to attain academic skills and knowledge, acquire technical knowledge and skills related to animal 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 knowledge and skills and technologies in a variety of settings. Topics covered in this course include, but are not limited to, veterinary practices as they relate to both large and small animal species.

(c) Knowledge and skills.

(1) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of veterinary science;

(B) demonstrate competencies related to resources, information, interpersonal skills, and systems of operation in veterinary science;

(C) demonstrate knowledge of personal and occupational health and safety practices in the workplace; and

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(2) The student researches current topics in veterinary medicine, recognizes the importance of animals in society, and discusses professional ethics and laws that relate to veterinary medicine. The student is expected to:

(A) explain the human-animal bond and how to interact with clients and their animals;

(B) identify trends, issues, and historical events that have influenced animal use and care;

(C) describe the legal aspects of animal welfare and animal rights;

(D) evaluate the principals of veterinary medical ethics; and

(E) review policies and procedures in veterinary medicine that are considered a reflection of various local, state, and federal laws.

(3) The student evaluates veterinary hospital management and marketing to determine its importance to the success of veterinary clinics and hospitals. The student is expected to:

(A) identify skills needed to communicate effectively with clients and pet owners in the community;

(B) identify vital information and demonstrate effective communication skills necessary to solve problems;

(C) explain the role and importance of marketing and its affects on the success of a veterinary hospital; and

(D) develop skills involving the use of electronic technology commonly found in a veterinary hospital.

(4) The student communicates the importance of medical terminology, evaluates veterinary terms to discover their meanings, and demonstrates the ability to use terms correctly. The student is expected to:

(A) analyze veterinary terms to discover their meanings and recognize common Greek and Latin prefixes, suffixes, and roots;

(B) develop appropriate use of directional anatomical terms;

(C) identify anatomical structures of animals;

(D) describe the major body systems by using appropriate medical terminology; and

(E) recognize, pronounce, spell, and define medical terms relating to diagnosis, pathology, and treatment of animals.

(5) The student explores the area of animal management as it relates to animal identification, animal characteristics, and behavioral temperament. The student is expected to:

(A) identify a variety of animal species according to common breed characteristics;

(B) recognize common animal behavioral problems;

(C) identify correct handling protocols and discuss the relevance to veterinary medical staff; and

(D) demonstrate appropriate methods of handling a variety of animal behavioral situations.

(6) The student investigates the body systems and gains a working knowledge of each system's purpose and functions and how each system is affected by disease. The student is expected to:

(A) identify the parts of the skeletal, muscular, respiratory, circulatory, digestive, endocrine, and nervous systems;

(B) describe the functions of the skeletal, muscular, respiratory, circulatory, digestive, endocrine, and nervous systems;

(C) identify appropriate anatomical sites for injections, measuring vital signs, and collecting blood samples for various animal species; and

(D) use medical terminology to describe normal animal behavior and vital signs compared to sick animals.

(7) The student performs mathematical calculations used in veterinary medicine. The student is expected to:

(A) add, subtract, multiply, and divide whole numbers, fractions, and decimals as related to veterinary medicine;

(B) apply mathematical skills needed for accurate client assessment such as measurement, conversion, and data analysis;

(C) find solutions to veterinary problems 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;

(G) interpret data using tables, charts, and graphs; and

(H) use mathematical equations to calculate and prepare chemical concentrations.

(8) The student evaluates animal diseases and identifies internal and external parasites. The student is expected to:

(A) identify factors that influence the health of animals;

(B) identify pathogens and describe the effects that diseases have on various body systems;

(C) explain the best courses of treatment for common diseases;

(D) describe the process of immunity and disease transmission;

(E) identify internal and external parasites using common and scientific names;

(F) describe life cycles of common parasites;

(G) explain how parasites are transmitted and their effect on the host;

(H) conduct parasitic diagnostic procedures; and

(I) describe types of treatments for diseases and parasites.

(9) The student evaluates an animal's health during a clinical examination. The student is expected to:

(A) describe the characteristics and signs of a healthy animal;

(B) recognize examples of abnormalities and relate them to the associated problems and illnesses;

(C) take temperature, pulse, and respiration for a variety of animals;

(D) describe effects of age, stress, and environmental factors on vital signs of animals;

(E) explain procedures for physical examinations; and

(F) explain the regional approach to assess an animal's health.

(10) The student identifies imaging equipment and demonstrates how to safely operate and maintain equipment. The student is expected to:

(A) identify imaging equipment such as ultrasonograph, endoscope, electrocardiograph, and radiograph;

(B) explain safety procedures, maintenance, and operation of imaging equipment; and

(C) demonstrate patient restraint and positioning methods used for imaging purposes.

(11) The student determines nutritional requirements for ruminant and non-ruminant animals and communicates the importance of animal nutrition in maintaining a healthy animal. The student is expected to:

(A) identify the anatomy of the digestive system of ruminant and non-ruminant animals;

(B) describe the process of digestion in ruminant and non-ruminant animals;

(C) identify types and sources of nutrients and classes of feeds;

(D) identify feed additives and describe how additives affect the food supply;

(E) evaluate animal dietary needs and feeding factors;

(F) calculate energy requirements and formulate rations;

(G) discuss feeding practices and feed-quality issues;

and

(H) analyze the quality of commercially prepared feeds.

(12) The student examines various aspects of clinical hematology. The student is expected to:

(A) describe laboratory tests and explain the importance of proper laboratory procedures;

(B) demonstrate the procedures used in collecting, handling, preparing, and examining fecal, blood, and urine specimens;

(C) discuss normal and abnormal results obtained in complete blood counts;

(D) explain sensitivity testing and how to read testing results; and

(E) prepare microscope slides, preserve specimens, and perform several of the most common laboratory tests.

(13) The student identifies hospital procedures, skills, and objectives that are included in the job description of an animal care assistant. The student is expected to:

(A) explain the care, maintenance, and use of equipment and instruments found in veterinary practice;

(B) explain appropriate hospital procedures;

(C) discuss emergency protocols and describe first aid procedures for small and large animals, including cardiopulmonary resuscitation, control of bleeding, and treatment for shock;

(D) demonstrate animal care skills such as administering medications, nail trimming, bathing, grooming, ear cleaning, expressing anal sacs, dental prophylaxis, enema administration, and identification of animals;

(E) demonstrate therapeutic care such as patient observation, maintaining and administering fluids, applying bandages, caring for open wounds, and managing hydrotherapy and physical therapy; and

(F) describe skills involved in the reproductive and genetic evaluation of animals.

(14) The student identifies and discusses surgical-assisting procedures, skills, and objectives that are included in the job description of an animal care assistant. The student is expected to:

(A) explain the protocol for pre-surgical and post-surgical care of a patient;

(B) describe methods used in the sterilization and preparation of small and large animal surgery packs;

(C) review skills involved in patient and surgical room preparation;

(D) describe surgical skills such as castration, dehorning, and docking;

(E) describe care of newborn, orphan, and recumbent patients; and

(F) identify and monitor equipment used in surgical procedures.

(15) The student identifies pharmacology-assisting procedures, skills, and objectives that are included in the job description of an animal care assistant. The student is expected to:

(A) identify medications according to their classification, form, routes, and methods of administration;

(B) explain handling and distribution, protocol, and laws for controlled substances;

(C) calculate dosage using factors such as concentration of drug, weight of animal, and required dosage;

(D) complete a prescription label with identifiers that are required by the United States Food and Drug Administration; and

(E) select equipment and instruments used to give medications.

(16) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.7. *Advanced Animal Science (One Credit).*

(a) General requirements. This course is recommended for students in Grade 12. Recommended prerequisite: a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources cluster. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum).

(b) Introduction.

(1) Advanced Animal Science. To be prepared for careers in the field of animal science, students need to attain academic skills and knowledge, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry standards. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings. This course examines the interrelatedness of human, scientific, and technological dimensions of livestock production. Instruction is designed to allow for the application of scientific and technological aspects of animal science through field and laboratory experiences.

(2) 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.

(3) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation are experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

(4) Science and social ethics. Scientific decision making is a way of answering questions about the natural world. 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).

(5) Science, systems, and models. A system is a collection of cycles, structures, and processes that interact. 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. 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.

(c) Knowledge and skills.

(1) The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices. These investigations must involve actively obtaining and analyzing data with physical equipment, but may also involve experimentation in a simulated environment as well as field observations that extend beyond the classroom. The student is expected to:

(A) demonstrate safe practices during field and laboratory investigations; and

(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.

(2) The student uses scientific methods and equipment during field and laboratory investigations. The student is expected to:

(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section;

(B) know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories;

(C) know 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;

(D) distinguish between scientific hypotheses and scientific theories;

(E) plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology;

(F) collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools and equipment;

(G) analyze, evaluate, make inferences, and predict trends from data; and

(H) communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

(3) The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical rea-

soning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials;

(C) draw inferences based on data related to promotional materials for products and services;

(D) evaluate the impact of scientific research on society and the environment;

(E) evaluate models according to their limitations in representing biological objects or events; and

(F) research and describe the history of science and contributions of scientists.

(4) The student evaluates the employability characteristics of an employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of animal systems;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in animal systems;

(C) demonstrate knowledge of personal and occupational safety and health practices in the workplace; and

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(5) The student demonstrates principles relating to the human, scientific, and technological dimensions of scientific animal agriculture and the resources necessary for producing domesticated animals. The student is expected to:

(A) evaluate market classes and grades of livestock;

(B) identify animal products and consumption patterns relative to human diet and health issues; and

(C) describe the growth and development of livestock as a global commodity.

(6) The student applies the principles of reproduction and breeding to livestock improvement. The student is expected to:

(A) describe reproductive cycles and relate them to breeding systems;

(B) explain the embryo transfer process and how it can impact the livestock industries;

(C) recognize the significance of meiosis to sexual reproduction; and

(D) evaluate animal behavior and its relationship to livestock management.

(7) The student applies the principles of molecular genetics and heredity. The student is expected to:

(A) explain Mendel's laws of inheritance by predicting genotypes and phenotypes of offspring using the Punnett square;

(B) explain the inheritance of sex-linked characteristics and provide some examples found in animals;

(C) identify and compare the three parts of nucleic acids;

(D) explain the functions of nucleic acids;  
(E) describe how heredity is used in the selection of livestock; and

(F) explain how traits are passed from parent to offspring through genetic transfer and the implications of breeding practices.

(8) The student examines and compares animal anatomy and physiology in livestock species. The student is expected to:

(A) identify and compare the external anatomy of a variety of livestock species;

(B) compare the anatomy and physiology of the skeletal, muscular, reproductive, digestive, circulatory, genito-urinary, respiratory, nervous, and endocrine systems of animals;

(C) describe interactions among various body systems such as circulatory, respiratory, and muscular systems; and

(D) identify and describe the functions of epithelial, connective, and muscular tissue and relate these to animal body systems.

(9) The student determines nutritional requirements of ruminant and non-ruminant animals. The student is expected to:

(A) describe the structures and functions of the digestive system of ruminant and non-ruminant animals, including poultry and cattle;

(B) identify and describe sources of nutrients and classes of feeds and relate to the ruminant and non-ruminant animals;

(C) identify and describe vitamins, minerals, and feed additives and how they relate to the nutritional requirements of ruminant and non-ruminant animals;

(D) formulate rations based on different nutritional requirements;

(E) analyze feeding practices in relation to nutritional requirements of animals; and

(F) analyze feed quality issues and determine their effect on animal health.

(10) The student evaluates animal diseases and parasites. The student is expected to:

(A) identify factors that influence the health of animals such as geographic location, age, genetic composition, and inherited diseases to a particular species;

(B) identify pathogens and describe the effects that diseases have on various body systems;

(C) explain the methods of prevention, control, and treatment for diseases;

(D) describe the process of immunity and disease transmission;

(E) explain how parasites are transmitted and the effect they have on the host;

(F) explain the methods of prevention, control, and treatment of internal and external parasites;

(G) describe the life cycles of various parasites and relate them to animal health issues; and

(H) conduct parasite diagnostic tests.

(11) The student defines how an organism grows and how specialized cells, tissues, and organs develop. The student is expected to:

(A) compare cells from different parts of animals, including epithelia, muscles, and bones, to show specialization of structure and function;

(B) describe and explain cell differentiation in the development of organisms; and

(C) sequence the levels of organization in animals and relate the parts to each other and to the whole.

(12) The student recognizes policies and issues in animal science. The student is expected to:

(A) discuss the impacts of biotechnology on the production of livestock such as cloning, artificial insemination, and freezing of semen and embryos;

(B) analyze the issues surrounding animal welfare and the humane treatment of livestock;

(C) apply principles of nutrition to maximize feed efficiency for livestock; and

(D) design, conduct, and complete research to solve a self-identified problem in scientific animal agriculture.

(13) The student discusses livestock harvesting operations. The student is expected to:

(A) map the stages of animal growth and development as it relates to market readiness;

(B) describe the harvesting process;

(C) describe federal and state meat inspection standards such as safety, hygiene, and quality control; and

(D) identify retail and wholesale cuts of meat and meat by-products and correlate to major muscle groups.

(14) The student explores methods of marketing livestock. The student is expected to:

(A) compare various methods of marketing livestock; and

(B) describe methods of marketing meat and meat products.

(15) The student develops an advanced supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.8. Professional Standards in Agribusiness (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) Introduction. To be prepared for careers in agribusiness systems, students need to attain academic skills and knowledge, acquire technical knowledge and skills related to leadership development and the workplace, and develop knowledge and skills regarding agricultural 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. This course primarily focuses on leadership, communication, employer-employee relations, and problem solving as they relate to agribusiness.

(c) Knowledge and skills.

(1) The student learns the employability characteristics of a successful contributor to the modern agricultural workplace. The student is expected to:

(A) identify career and entrepreneurship opportunities related to agribusiness;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in agriculture, food, and natural resource industries;

(C) demonstrate employers' expectations, appropriate work habits, and good citizenship skills; and

(D) employ leadership skills to accomplish organizational goals and objectives.

(2) The student demonstrates professional development related to effective leadership in agribusiness. The student is expected to:

(A) describe the importance of positive self-concept, social skills, and maintaining a professional image with respect to cultural diversity;

(B) identify leadership styles;

(C) prepare personal resumés and employment applications; and

(D) use positive interpersonal skills to work cooperatively with others from different cultures, genders, and backgrounds.

(3) The student evaluates employer and employee responsibilities for occupations in agriculture, food, and natural resources. The student is expected to:

(A) identify and discuss work-related and agribusiness-related ethics;

(B) demonstrate methods for working effectively with others;

(C) practice job interview and evaluation skills; and

(D) outline complaint and appeal processes.

(4) The student communicates effectively with groups and individuals. The student is expected to:

(A) understand the elements of communication both in informal group discussions and formal presentations such as accuracy, relevance, rhetorical features, and organization of information by:

(i) describing how style and content of spoken language varies in different contexts and influences the listener's understanding; and

(ii) modifying presentations such as delivery, vocabulary, length, audience needs, and purposes;

(B) identify appropriate written and verbal communications in agribusiness;

(C) demonstrate effective listening in a variety of settings;

(D) demonstrate nonverbal communications skills and effective listening strategies; and

(E) discuss the importance of relationships and group organization.

(5) The student identifies professional agricultural communications in relation to using appropriate spoken communication techniques and procedures. The student is expected to:

(A) identify the importance of verbal and nonverbal communications;

(B) know the importance of communicating factual and unbiased data and information obtained from reliable sources;

(C) demonstrate speech preparation and delivery skills; and

(D) plan and deliver focused and coherent presentations that convey clear and distinct perspectives and demonstrate solid reasoning.

(6) The student demonstrates the factors of group and individual efficiency. The student is expected to:

(A) define the significance of personal and group goals;

(B) exhibit traits such as empowerment, risk, communication, focusing on results, decision making, problem solving, and investment in individuals when leading a group in solving a problem;

(C) discuss the importance of time management and teamwork;

(D) list the steps in the decision-making and problem-solving processes; and

(E) demonstrate a working knowledge of parliamentary law.

(7) The student identifies involvement opportunities in agribusiness professional organizations. The student is expected to:

(A) discuss the role of agricultural organizations in formulating public policy;

(B) develop strategies for effective participation in agricultural organizations; and

(C) identify various agricultural organizations such as Texas Farm Bureau, The Association of Soil and Water Conservation Districts, Texas and Southwestern Cattle Raisers Association, Independent Cattlemen's Association, agricultural cooperatives, commodity associations, and breed associations.

(8) The student identifies and researches current agribusiness issues. The student is expected to:

(A) compare and contrast the marketing of agricultural and non-agricultural products; and

(B) describe the effects of urbanization on traditional agriculture.



(9) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) employ youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.9. Agribusiness Management and Marketing (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. To be prepared for careers in agribusiness systems, students need to attain academic skills and knowledge, acquire technical knowledge and skills related to agribusiness marketing and management 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. This course is designed to provide a foundation to agribusiness management and the free enterprise system. Instruction includes the use of economic principles such as supply and demand, budgeting, record keeping, finance, risk management, business law, marketing, and careers in agribusiness.

(c) Knowledge and skills.

(1) The student learns the employability characteristics of a successful employee in the field of agriculture, food, and natural resources. The student is expected to:

(A) identify career development and entrepreneurship opportunities in agribusiness systems;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in agribusiness systems;

(C) demonstrate knowledge of personal and occupational health and safety practices in the workplace; and

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(2) The student recognizes roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment. The student is expected to:

(A) identify how key organizational systems affect organizational performance and the quality of products and services related to agriculture, food, and natural resources;

(B) understand the global context of agricultural industries and careers; and

(C) describe the nature and types of agribusiness organizations to build an understanding of the scope of organizations.

(3) The student examines critical aspects of career opportunities in one or more agriculture, food, and natural resources careers. The student is expected to:

(A) research and interpret information for one or more careers in agriculture, food, or natural resources; and

(B) identify educational and credentialing requirements for one or more careers in agriculture, food, and natural resources.

(4) The student defines and examines agribusiness management and marketing and its importance to the local and international economy. The student is expected to:

(A) describe the roles and functions of management in agribusiness;

(B) identify key economic principles of free enterprise; and

(C) analyze the economic opportunities of agribusiness.

(5) The student defines the importance of records and budgeting in agribusiness. The student is expected to:

(A) maintain appropriate agribusiness records such as payroll, employee benefits, journals, inventories, income and expense logs, financial statements, and balance sheets;

(B) identify methods of obtaining agribusiness loans and financing; and

(C) compare methods of capital resource acquisition as it pertains to agriculture.

(6) The student describes issues related to government policy and recognizes concepts related to cultural diversity. The student is expected to:

(A) analyze methods of decision making;

(B) examine the effects of government policies and regulations in making management decisions;

(C) describe the management of human resources with respect to cultural diversity;

(D) identify laws pertaining to land and property ownership and uses, taxes, wills, and liabilities; and

(E) develop a personal economic philosophy.

(7) The student defines key issues of agribusiness success and failure. The student is expected to:

(A) use the decision-making process for budgeting issues;

(B) analyze business records and record-keeping procedures;

(C) determine methods of financing agribusiness; and

(D) identify methods of obtaining capital resources.

(8) The student describes the marketing of agricultural products. The student is expected to:

(A) describe the purpose and importance of marketing;

(B) develop a marketing plan;

(C) identify the competitive environment and the impact of foreign markets;

(D) compare types of markets and influence factors; and

(E) identify methods of managing risk.

(9) The student knows the efficiency aspects of agribusiness management. The student is expected to:

(A) use management software and information technology such as spreadsheets and databases;

(B) develop an entrepreneurial plan based on personal economic philosophy;

(C) develop a financial management plan; and

(D) present a business proposal.

(10) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.10. *Mathematical Applications in Agriculture, Food, and Natural Resources (One Credit).*

(a) General requirements. This course is recommended for students in Grade 12. Recommended prerequisite: a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources cluster.

(b) Introduction. To be prepared for careers in agriculture, food, and natural resources, students must acquire technical knowledge in the discipline as well as apply academic skills in mathematics. Students should 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 success, students are afforded opportunities to reinforce, apply, and transfer their knowledge and skills related to mathematics in a variety of contexts.

(c) Knowledge and skills.

(1) 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 in agribusiness, animal, environmental service, food products and processing, natural resources, plant, and power, structural, and technical systems such as equal to, not equal, greater than, and less than;

(B) apply statistical and data analysis to solve problems in agribusiness, animal, environmental service, food products and processing, natural resources, plant, or power, structural, and technical systems;

(C) analyze mathematical problem statements for missing or irrelevant data essential to 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 agribusiness, animal, environmental service, food products and processing, natural resources, plant, and power, structural, and technical systems; and

(E) analyze data when interpreting operational documents in agribusiness, animal, environmental service, food products and processing, natural resources, plant, and power, structural, and technical systems.

(2) The student demonstrates mathematics knowledge and skills to solve problems related to agribusiness systems and career opportunities. The student is expected to:

(A) use mathematic operations and knowledge of relationships to solve daily problems inherent to agribusiness systems such as record keeping, profit/loss statements, income statements, capital asset inventories, insurance, risk management, lease agreements, loan documentation, employee payroll, benefits, investments, tax documentation, and real estate contract documentation;

(B) demonstrate knowledge of algebraic applications linear and exponential functions related to agribusiness systems concepts such as simple interest, compound interest, maturity value, tax rates, depreciation, production analysis, market trends, investments, and price determination; and

(C) demonstrate use of statistical and data analysis for the evaluation of agribusiness systems such as the collection of demographic, production, consumption, weather, market data for analysis through counts, percentages, central tendency, and prediction. Data is to be reported numerically or graphically on concepts such as pricing, market trends, commodity prices, exports and imports, supply and demand, and production yields.

(3) The student demonstrates mathematics knowledge and skills to solve problems related to animal systems and career opportunities. The student is expected to:

(A) use mathematic operations and knowledge of relationships to solve problems inherent to animal systems such as the calculation of purchasing and marketing, housing requirements, conversion of units, average daily gain, topical and injectable medications, United States Department of Agriculture (USDA) grade calculation, feeding schedules, volumes, production cost, stocking rates, breeding, and gestation;

(B) demonstrate knowledge of algebraic applications related to animal systems concepts such as ration calculation using the Pearson Square, percent homozygosity, heritability, USDA grade calculation, gene frequency, cost per unit of nutrient, and weaning weight ratio;

(C) use geometric principles to solve problems inherent to animal systems such as square footage for housing requirements; acreage calculation for normal and irregular shaped pastures; the use of right triangles for perpendicular cross fencing; calculation of feed bin volume based upon shape such as cylinder, cone, cube, or pyramid; and housing volume calculations for ventilation; and

(D) demonstrate use of statistical and data analysis in animal systems such as the collection and analysis of production data to be reported numerically or graphically on concepts such as birth weight, weaning weights, 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.

(4) The student demonstrates mathematical knowledge and skills to solve problems related to environmental service systems and career opportunities. The student is expected to:

(A) use mathematic operations and knowledge of relationships to solve problems inherent to environmental service systems such as the calculation of gallons of water from inches of rain, acres of ground water, liquid and gaseous volumes, and conversion of units;

(B) demonstrate knowledge of algebraic applications to create solutions to problems related to environmental service systems concepts 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;

(C) use geometric principles to solve problems inherent to environmental service systems such as acreage calculation for normal and irregular shaped pastures, calculating slope of land, planning runoff drainage structures, and applying differential leveling techniques; and

(D) demonstrate use of statistical and data analysis in environmental service systems such as the collection and analysis of environmental data to be reported numerically or graphically on concepts such as rainfall, soil classifications, groundwater levels, recycling activities, and pollution rates.

(5) The student demonstrates mathematics knowledge and skills required to solve problems related to food products and processing systems and career opportunities. The student is expected to:

(A) use mathematic operations and knowledge of relationships to solve and analyze problems inherent to food products and processing systems such as the calculation of caloric value, parts per million of restricted ingredients, conversion of measurements, and USDA grades;

(B) demonstrate knowledge of algebraic applications related to food products and processing systems concepts 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;

(C) use geometric principles to solve problems inherent to food products and processing systems such as the calculation of packaging requirements, construction of food storage structures and containers, liquid transfer materials, and vessels design and volume; and

(D) demonstrate use of statistical and data analysis in food products and processing systems data to be reported numerically or graphically on concepts such as such as governmental regulations, hazard analysis, critical control points data, taste tests, quality assurance data, and industry packing practices.

(6) The student demonstrates mathematics knowledge and skills to solve problems related to natural resources systems and career opportunities. The student is expected to:

(A) use mathematic operations and knowledge of relationships to solve problems inherent to natural resource systems such as the estimation of wildlife populations, pulpwood yields, and calculation of mapping data;

(B) demonstrate knowledge of algebraic applications related to natural resource systems concepts such as the calculation of mean harvest area, calibration of pesticides, and the Doyle Log Rule;

(C) use geometric principles to solve problems inherent to natural resource systems 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; and

(D) demonstrate use of statistical and data analysis for the evaluation of natural resource systems data to be reported numerically or graphically for resource data analysis, analysis of Geographic Information Systems and Global Positioning Systems data, analysis of weather-related data, and analysis of data related to wildlife and habitat.

(7) The student demonstrates mathematics knowledge and skills to solve problems related to plant systems and career opportunities. The student is expected to:

(A) use mathematic operations and knowledge of relationships to solve problems inherent to plant systems 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;

(B) demonstrate knowledge of algebraic applications related to plant systems concepts such as the calculation of grain handling efficiency, harvesting capacity, crop rotation, seeding rates, fertilizer nutrient requirements, and greenhouse ventilation;

(C) use geometric principles for the analysis of problems inherent to plant systems such as plan grain storage structures, volume of grain storage vessels, grain handling volume, greenhouse capacity, and regular and irregular shaped planting bed size; and

(D) demonstrate use of statistical and data analysis in plant systems such as crop yields, Global Information Systems data, plant growth data, and climate data.

(8) The student demonstrates mathematics knowledge and skills to solve problems related to power, structural, and technical systems education and career opportunities. The student is expected to:

(A) use mathematic operations and knowledge of relationships to solve problems inherent to power, structural, and technical systems such as the calculation of gear ratio, fuel efficiency, construction costs, project layout, energy costs, unit conversions, bid preparation, and labor-related calculations;

(B) demonstrate knowledge of algebraic applications related to power, structural, and technical systems concepts such as the calculation of strength of magnetism, chain or belt tension, horsepower, Ohm's Law, hydraulic multiplication of force, and Mohr's Circle tensile strength test;

(C) use geometric principles for the evaluation of problems inherent to power, structural, and technical systems such as rafter length, land measurement, differential leveling, concrete volume, heating, ventilating, and air conditioning requirements and creation of structural drawings; and

(D) use statistical and data analysis to evaluate power, structural, and technical systems problems such as construction cost data; equipment maintenance; heating, ventilating, and air conditioning efficiencies; engine performance; and labor costs.

(9) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identi-

fied, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.11. Energy and Natural Resources Technology (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. To be prepared for careers in the field of energy and natural resource systems, students need to 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 to have opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings. This course 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.

(c) Knowledge and skills.

(1) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

(2) The student uses instructional time to conduct field and laboratory investigations using safe, environmentally appropriate, and ethical practices in a documented supervised experience. The student is expected to:

(A) demonstrate safe practices during field and laboratory investigations in a documented supervised experience; and

(B) use accepted procedures for the use and conservation of resources and for the safe handling of materials.

(3) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the fields of energy and natural resources;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in energy and natural resources;

(C) demonstrate knowledge of personal and occupational health and safety practices in the workplace;

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and

(E) demonstrate leadership skills to accomplish organizational goals and objectives.

(4) The student determines the importance and scope of energy and natural resources. The student is expected to:

(A) identify various types of natural resources;

(B) discuss renewable, non-renewable, and sustainable energy resources and their availability;

(C) define the impacts of energy production on natural resources and the effect on the agricultural economy; and

(D) analyze the geographic and demographic distribution of natural resources.

(5) 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) understand landowner and leasing company relationships;

(C) review public interest in natural resource management; and

(D) understand the impacts of natural resource management on the landowner.

(6) The student understands energy and natural resource policies at the local, state, and national level. The student is expected to:

(A) identify policy affecting the use of natural resources;

(B) identify policy affecting energy production;

(C) research ecological controls of natural resources;

(D) identify state and federal agencies that have natural resource management responsibilities; and

(E) define the roles of government, society, and property owners in the development of energy and natural resource policy.

(7) The student recognizes the purpose of land use planning. The student is expected to:

(A) identify the major categories of land use;

(B) evaluate considerations for land use planning, including ecological benefits;

(C) discuss advantages and disadvantages of land use planning;

(D) compare and contrast land use policy trends within the state; and

(E) discuss the advantages and disadvantages of land use planning for energy production.

(8) The student identifies water and wastewater use and management. The student is expected to:

(A) identify municipal, industrial, and agricultural uses of water, including recycling opportunities;

(B) discuss how different types of water uses pollute water resources;

(C) define point source and non-point source pollution;

(D) identify sources of point source and non-point source pollution associated with municipal, industrial, and agricultural uses;

(E) describe effective management practices commonly used to abate point and non-point sources of pollution;

(F) discuss how the different types of water uses impact water availability;

(G) research water use legislation;

(H) review water quality policy, including the agricultural storm water exclusion, and how it affects the decisions made in agricultural production; and

(I) discuss the potential impacts of energy production on water resources.

(9) The student describes air quality associated with energy production. The student is expected to:

(A) define air pollution;

(B) research air quality legislation;

(C) identify sources and effects of air pollution from energy production;

and

(E) identify air pollution controls used in energy production.

(10) The student examines soil erosion as related to energy production. The student is expected to:

(A) identify sources of energy production that can contribute to soil erosion;

(B) illustrate harmful effects of soil erosion;

(C) discuss legal aspects of soil erosion; and

(D) list soil erosion control methods and programs.

(11) The student analyzes the identification, handling, storing, and disposing of waste and hazardous materials. The student is expected to:

(A) identify types of waste and hazardous materials;

(B) research legislation related to waste and hazardous materials;

(C) identify entities responsible for waste and hazardous material management; and

(D) describe safe handling, storing, and disposal of waste materials, including composting and recycling.

(12) The student learns the processes for producing energy from agricultural crops, biomass, fossil fuel, wind, solar, and geothermal sources. The student is expected to:

(A) identify agricultural and silvicultural crops and bi-products suitable for renewable energy production;

(B) discuss production processes for agricultural- and silvicultural-based biofuels;

(C) describe the fundamentals for oil, gas, and coal recovery;

(D) compare and contrast oil and gas drilling methods and the environmental considerations associated with each, including environmentally friendly alternatives;

(E) compare and contrast coal mining methods and the environmental considerations associated with each;

(F) analyze advantages and disadvantages of wind-generated energy;

(G) identify public policy considerations associated with transmission line construction to move wind-generated energy;

(H) locate areas in the state that have geothermal energy production potential;

(I) explain the benefits of geothermal energy;

(J) identify solar energy systems and describe the function of each; and

(K) identify the environmental considerations associated with biofuels and wind energy.

§130.12. *Advanced Environmental Technology (One Credit).*

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources cluster.

(b) Introduction. To be prepared for careers in environmental service systems, students need to 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. This course examines the interrelatedness of environmental issues and production agriculture. Students evaluate sustainable resources and green technologies which will provide environmental benefits. 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.

(c) Knowledge and skills.

(1) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of environmental technology;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in environmental technology;

(C) demonstrate knowledge of personal and occupational safety practices in the workplace;

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and

(E) demonstrate leadership skills to accomplish organizational goals and objectives.

(2) The student develops an advanced supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

(3) The student uses instructional time to conduct field and laboratory investigations using safe, environmentally appropriate, and ethical practices in a documented supervised experience. The student is expected to:

(A) demonstrate safe practices during field and laboratory investigations in a documented supervised experience; and

(B) use accepted procedures for the use and conservation of resources and for the safe handling of materials.

(4) The student determines 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 the 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 distribution of natural resources.

(5) 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, including the benefits of 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) identify effective management practices commonly used to abate point and non-point sources of pollution;

(G) explain the impact of agriculture production on water quality as related to the functioning of watersheds;

(H) evaluate how the different agricultural water uses may impact water availability;

(I) research water use legislation; and

(J) research water quality policy, including the agricultural storm water exclusion, and how it affects the decisions made in agricultural production.

(6) The student describes air quality associated with agricultural production. The student is expected to:

(A) describe the anatomy 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.

(7) The student examines soil erosion as related to agricultural production. The student is expected to:

(A) describe the components, dynamics, properties, and functions of soils;

(B) identify agriculture production practices that can contribute to soil erosion;

(C) graph harmful effects of soil erosion;

(D) discuss the legal aspects of soil erosion;

(E) explain soil erosion control methods and programs;  
and

(F) identify how soil erosion affects the environment.

(8) The student explains the use and abuse of natural resources. 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 resulting environmental consequences, including those on living organisms.

*§130.13. Food Technology and Safety (One-Half to One Credit).*

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. To be prepared for careers in value-added and food processing systems, students need to 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. This course examines the food technology industry as it relates to food production, handling, and safety.

(c) Knowledge and skills.

(1) The student explains the impact of food science systems. The student is expected to:

- (A) know 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.

(2) 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.

(3) 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; and
- (D) assess conditions with regard to safety and health.

(4) 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; and
- (D) compare and contrast packaging requirements.

(5) The student compares and contrasts issues affecting the food science industry, including biotechnology, employment, safety, environmental, and animal welfare, to demonstrate an understanding of the trends and issues important to careers in the food science industry. 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 the issue;
- (D) analyze and defend solutions for different environmental issues; and
- (E) learn economic principles in order to apply them to food science systems such as supply, demand, and profit.

(6) 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 United States Department of Agriculture inspection and grading procedures;
- (C) identify wholesale and retail cuts;

(D) evaluate and grade beef, pork, and lamb carcasses and wholesale cuts; and

(E) identify methods of fabricating and marketing processed meats.

(7) 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) know quality and portion control procedures; and
- (F) describe marketing procedures for eggs, poultry, fish, and seafood.

(8) 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.

(9) 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 cultured milk products and frozen dairy desserts;
- (D) process, classify, and grade cheese; and
- (E) identify dairy products.

(10) The student learns the employability characteristics of a successful employee. The student is expected to:

- (A) locate and identify career opportunities that appeal to personal career goals;
- (B) apply competencies related to resources, information, interpersonal skills, and systems of operation of value-added and food processing;
- (C) demonstrate knowledge of personal and occupational health and safety practices in the workplace;
- (D) identify employers' expectations, appropriate work habits, and good citizenship skills; and
- (E) access and navigate the Internet for research.

(11) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.14. Food Processing (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. To be prepared for careers in food products and processing systems, students need to 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. This course focuses on the food processing industry with special emphasis on the handling, processing, and marketing of food products.

(c) Knowledge and skills.

(1) 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.

(2) 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.

(3) 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.

(4) 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 by:

(i) explaining the impact of temperature in food preservation; and

(ii) comparing and contrasting packaging preservation such as film, plastic, and can; and

(D) describe harvest and inspection techniques to process food products and analyze food product options.

(5) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the value-added and food processing industry;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in the value-added and food processing industry;

(C) demonstrate knowledge of personal and occupational safety practices in the workplace;

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and

(E) access and navigate the Internet for research.

(6) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills related to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.15. Wildlife, Fisheries, and Ecology Management (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) Introduction. To be prepared for careers in natural resource systems, students need to 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. This course examines the management of game and non-game wildlife species, fish, and aquacrops and their ecological needs as related to current agricultural practices.

(c) Knowledge and skills.



(1) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of natural resources;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in natural resources;

(C) demonstrate knowledge of personal and occupational health and safety practices in the workplace; and

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(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) describe how public recreation use is a product.

(3) The student knows the scientific basis for wildlife management. The student is expected to:

(A) identify the basic ecological concepts of game management;

(B) identify game, non-game, and fish species;

(C) describe the management of wildlife populations;

(D) identify observable diseases impacting plants and animals; and

(E) describe how to report observance of disease infestations.

(4) The student knows the interrelationships between the various aspects of wildlife and outdoor public use management. The student is expected to:

(A) identify special areas of importance in wildlife and public use management;

(B) identify laws and regulations regarding the use of wildlife resources;

(C) discuss laws and regulations regarding recreation safety;

(D) list factors involved in landowner and property rights;

(E) demonstrate specific safety certification requirements;

(F) demonstrate precautions to use when interfacing with the public concerning regulations and law enforcement;

(G) describe security issues for closed and restricted areas;

(H) describe solutions to issues concerning public protection;

(I) recognize potential threat situations for the public and other users;

(J) identify the appropriate law enforcement authority;

(K) describe wildlife harvest techniques and procedures; and

(L) describe fish harvest techniques and procedures.

(5) The student examines natural cycles and related phenomena to describe ecologic concepts and principles. The student is expected to:

(A) explain the hydrologic, nitrogen, carbon, and nutrient cycles;

(B) describe succession;

(C) describe population dynamics;

(D) distinguish between primary and secondary producers;

(E) describe predator-prey relationships;

(F) identify potential pollution sources;

(G) define watershed boundaries;

(H) use the stream classification system; and

(I) describe the influence of weather and climatic factors.

(6) The student applies cartographic skills to natural resource activities. The student is expected to:

(A) describe different types of maps;

(B) interpret map features and legends;

(C) determine map scale and actual distance;

(D) determine direction from map;

(E) determine elevation and terrain features from topographic maps;

(F) use directional tools with maps to locate position;

(G) use land survey and coordinate system; and

(H) use a Geographic Information System to interface geospatial data and interpret photos and images.

(7) The student obtains planning data by monitoring natural resource status. The student is expected to:

(A) describe 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;

(F) use a Geographic Information System to analyze resource data;

(G) create a technical report; and

(H) describe the relationship of harvest levels to long-term availability of resources.

(8) The student executes various natural resource enhancement techniques using scientific knowledge from the study of environment and wildlife. The student is expected to:

(A) demonstrate stream enhancement techniques;

(B) demonstrate wildlife habitat enhancement techniques; and

(C) demonstrate public use and recreation area enhancement techniques.

(9) The student demonstrates the concepts related to the importance of facilities, harvest, processing, and marketing of aquaculture products. The student is expected to:

(A) discuss the importance and progress of aquaculture as an emerging industry; and

(B) identify and classify plant and animal aquaculture species.

(10) The student demonstrates concepts related to optimum production. The student is expected to:

(A) describe nutritional aspects of aquaculture production;

(B) discuss requirements for optimum growth of species-specific aquacrops;

(C) plan and administer treatments for diseases, parasites, predators, and pests of species-specific aquacrops;

(D) recognize weather-related dangers;

(E) recognize hazards as they relate to terrain;

(F) identify poisonous plants and animals;

(G) recognize hazardous situations; and

(H) demonstrate personal fire prevention precautions while working in natural environments.

(11) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.16. Range Ecology and Management (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. To be prepared for careers in environmental and natural resource systems, students need to 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. This course is designed to develop students' understanding of rangeland ecosystems and sustainable forage production.

(c) Knowledge and skills.

(1) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

(2) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of environmental and natural resources;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in environmental and natural resources;

(C) demonstrate knowledge of personal and occupational health and safety practices in the workplace; and

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(3) 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.

(4) The student gains an understanding of rangeland as a dynamic, living, and changeable resource. The student is expected to:

(A) explain the relationship of rangeland to the environment;

(B) discuss the interrelationships of water, alternative use, carrying capacity, and population;

(C) identify and classify range plants and their importance in the rangeland ecosystem;

(D) explore the use of rangeland plants as alternative energy sources; and

(E) develop an understanding of the role of rangeland in water recharge and conservation.

(5) The student analyzes the biotic and abiotic components of a rangeland. The student is expected to:

(A) discuss abiotic components of rangeland with an emphasis on soil;

(B) determine abiotic components of rangeland with an emphasis on topography;

(C) understand the importance of classifying range sites by shape, soil types, and depth;

(D) identify important range plants; and

(E) recognize plant characteristics that impact rangeland ecology.

(6) 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;

and  
(B) compare and contrast rangeland condition trends;

and  
(C) describe ways and means to improve range conditions.

(7) The student applies rangeland ecology concepts as related to domestic livestock. The student is expected to:

(A) recognize plants beneficial to domestic livestock;

(B) identify plants poisonous to domestic livestock;

(C) describe how livestock use range plants; and

(D) select a proper mixture of domestic livestock appropriate for specific range sites.

(8) The student identifies methods of maintaining and improving rangeland for wildlife production. The student is expected to:

(A) identify plants beneficial to wildlife;

(B) recognize plants poisonous to wildlife;

(C) understand how wildlife species use range plants;

and

(D) determine proper species of wildlife used to develop for specific range sites.

(9) The student develops an understanding of rangeland as it relates to worldwide concerns. The student is expected to:

(A) predict the effect of rangeland as recharge zones for aquifers;

(B) draw conclusions on the effect of rangeland on the carbon footprint of agriculture products;

(C) draw conclusions concerning the impact of rangeland on global warming; and

(D) develop an understanding of rangeland's role in energy production, including wind and ethanol production as well as fossil fuels.

§130.17. Forestry and Woodland Ecosystems (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. To be prepared for careers in natural resource systems, students need to 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. This course examines current man-

agement practices for forestry and woodlands. Special emphasis is given to management as it relates to ecological requirements and how these practices impact the environment.

(c) Knowledge and skills.

(1) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of forestry and woodland ecosystems;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in forestry and woodland ecosystems;

(C) demonstrate knowledge of personal and occupational safety practices in the workplace; and

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(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 growth;

(C) identify species of trees;

(D) identify forest and woodland soils;

(E) describe silviculture;

(F) define ecosystems;

(G) describe photosynthesis and respiration;

(H) describe watershed management;

(I) define succession; and

(J) compare 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 by cruising timber stands; and

(D) calculate quality and volume by scaling logs.

(4) The student performs forestry management skills. The student is expected to:

(A) identify forestry management options;

(B) define multiple-use possibilities; and

(C) demonstrate the control of destructive agents such as fire, insects, and disease.

(5) The student identifies softwood and hardwood forest management and utilization 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) identify 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) identify 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) describe different types of maps;

(B) interpret map features and legends;

(C) interpret map scale and actual distance;

(D) identify direction from map;

(E) distinguish elevation and terrain features from topographic maps;

(F) use directional tools with maps to locate position;

(G) use land survey and coordinate systems;

(H) use a Geographic Information System to interface geospatial data; and

(I) interpret photos and images.

(8) The student identifies and distinguishes ethical practices in the field of natural resource systems. The student is expected to:

(A) identify and evaluate ethical guidelines;

(B) evaluate how advances in science and technology have raised concerns about ethical issues; and

(C) identify a national organization or institution that seeks to promote ethical behavior and analyze its success and impact.

(9) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.18. Principles and Elements of Floral Design (One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction.

(1) To be prepared for careers in floral design, students need to attain academic skills and knowledge as well as technical knowledge and skills related to horticultural systems 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. This course is designed to develop students' ability to identify and demonstrate the principles and techniques related to floral design as well as develop an understanding of the management of floral enterprises.

(2) Through the analysis of artistic floral styles and historical periods, students develop respect for the traditions and contributions of diverse cultures. Students respond to and analyze floral designs, thus contributing to the development of lifelong skills of making informed judgments and evaluations.

(c) Knowledge and skills.

(1) The student identifies design principles and techniques in floral art and interiorscapes. The student is expected to:

(A) identify the aesthetic benefits and the history of floral art, particularly as it relates to current practice;

(B) classify and identify flowers and plants used in floral design; and

(C) identify design elements and principles.

(2) The student demonstrates floral design principles and techniques. The student is expected to:

(A) understand and implement the design process through the medium of floral materials;

(B) evaluate and prepare geometric floral designs using cut flowers;

(C) evaluate and prepare geometric floral designs using silk flowers;

(D) prepare corsages and boutonnieres; and

(E) prepare floral designs for specific occasions.

(3) The student develops and formulates ideas from the environment. The student is expected to:

(A) illustrate ideas for floral designs from direct observation, experiences, and imagination;

(B) compare and contrast the use of art elements such as color, texture, form, line, and space; and

(C) compare and contrast the art principles of art elements such as continuity, pattern, rhythm, balance, proportion, and unity in personal designs.

(4) The student makes informed judgments about personal designs and the designs of others. The student is expected to:

(A) interpret, evaluate, and justify artistic decisions in personal arrangements; and

(B) select and analyze original designs, portfolios, and floral exhibitions by peers and others to form precise conclusions about formal qualities, and historical and cultural contexts, intents, and meanings.

(5) The student demonstrates contemporary designs, business practices, specialty items, and creativity in the floral industry by developing floral design skills. The student is expected to:

(A) classify and identify specialty floral items;

(B) evaluate and appraise floral designs;

(C) prepare cost-effective designs;

(D) create specialty designs to expand artistic expression;

and (E) demonstrate pricing and order-processing skills;

(F) list service delivery options related to effectiveness.

(6) The student knows the management factors of floral enterprises. The student is expected to:

(A) use temperature, preservatives, and cutting techniques to increase keeping quality;

(B) identify tools, chemicals, and equipment used in floral design;

(C) fertilize, prune, and water tropical plants;

(D) manage pests; and

(E) demonstrate the technical skills for increasing the preservation of cut flowers and foliage.

(7) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of floral design and interior landscape development;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in floral design and interior landscape development;

(C) demonstrate knowledge of personal and occupational health and safety practices in the workplace;

(D) identify employers' expectations, appropriate work habits, and good citizenship skills; and

(E) identify training, education, and certification requirements for occupational choice.

(8) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.19. Landscape Design and Turf Grass Management (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. To be prepared for careers in horticultural systems, students need to 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. This course is designed to develop an understanding of landscape and turf grass management techniques and practices.

(c) Knowledge and skills.

(1) The student learns the employability skills of a successful employee in the modern workplace. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of landscape design and turf grass management, including how to search for and obtain employment, what qualifications are required for varying career fields, and how to advance in a position;

(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in landscape design, construction, and maintenance;

(C) examine licensing, certification, and credentialing requirements to maintain compliance with industry requirements;

(D) demonstrate knowledge of personal and occupational health and safety practices in the industry; and

(E) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

(3) The student identifies environmental, aesthetic, and financial benefits of landscaped sites. The student is expected to:

(A) assess soil characteristics and environmental conditions;

(B) complete a site analysis checklist;

(C) observe or operate graphics design equipment or software to produce a site sketch; and

(D) identify plants and structures used in designing landscapes.

(4) The student performs landscape business procedures. The student is expected to:

(A) interview potential clients;

(B) prepare cost estimates such as materials, labor, and administrative cost and service schedules; and

(C) execute service contracts.

(5) The student analyzes the cost and maintenance of tools, equipment, and structures used in the landscape industry. The student is expected to:

(A) identify, store, and maintain landscaping hand and power tools and equipment;

(B) prepare plant growing sites;

(C) install landscape plants and structures;

(D) select and install landscape irrigation systems; and

(E) perform turf grass services such as mowing, renovating, fertilizing, pesticide application, weed control, and watering.

(6) The student performs turf grass establishment and maintenance techniques. The student is expected to:

(A) identify, store, and maintain turf grass hand and power tools and equipment;

(B) identify different varieties of turf grasses and selected use;

(C) prepare a cost estimate for a turf grass site, including materials and labor;

(D) prepare turf grass sites for sodding or seeding;

(E) select the proper turf grass for a site;

(F) select the method of turf grass installation;

(G) select and install turf grass irrigation systems; and

(H) perform turf grass services such as mowing, renovating, fertilizing, pesticide application, weed control, and watering.

§130.20. Horticulture Science (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. To be prepared for careers in horticultural systems, students need to attain academic skills and knowledge, acquire technical knowledge and skills related to horticulture 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 knowledge and skills in a variety of settings. This course is designed to develop an understanding of common horticultural management practices as they relate to food and ornamental plant production.

(c) Knowledge and skills.

(1) The student learns the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of horticulture;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in horticulture;

(C) demonstrate knowledge of personal and occupational safety practices in the workplace; and

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(2) The student develops technical skills associated with the management and production of horticultural plants. The student is expected to:

(A) classify horticultural plants based on physiology for taxonomic or other classifications;

(B) manage the horticultural production environment;

(C) propagate and grow horticultural plants;

(D) create a design using plants that demonstrates an application of design elements and principles;

(E) design and establish landscapes; and

(F) describe the process of fruit, nut, and vegetable production.

(3) The student identifies structures and physiological processes used in plant production. The student is expected to:

(A) examine unique plant properties to identify and describe functional differences in plant structures, including roots, stems, flowers, leaves, and fruit;

(B) differentiate between monocots and dicots and male and female plants;

(C) germinate and transplant seeds; and

(D) demonstrate asexual propagation techniques.

(4) The student manages and controls common pests of horticultural plants. The student is expected to:

(A) identify common horticultural pests;

(B) demonstrate safe practices in selecting, applying, storing, and disposing of chemicals; and

(C) develop a plan for integrated pest management.

(5) The student demonstrates marketing and management skills used in the operation of horticultural businesses. The student is expected to:

(A) identify and maintain hand and power tools and equipment;

(B) select appropriate tools and equipment;

(C) demonstrate safe use of tools and equipment;

(D) identify options and opportunities for business ownership; and

(E) analyze the role of small business in free enterprise.

(6) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.21. Advanced Plant and Soil Science (One Credit).

(a) General requirements. This course is recommended for students in Grade 12. Recommended prerequisite: a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources cluster.

(b) Introduction.

(1) Plant and Soil Science provides a way of learning about the natural world. Students should know how plant and soil science has influenced a vast body of knowledge, that there are still applications to be discovered, and that plant and soil science is the basis for many other fields of science.

(2) Investigations, laboratory practices, and field exercises will be used to develop an understanding of current plant and soil science.

(3) This course is designed to prepare students for careers in the food and fiber industry. Students will learn, reinforce, apply, and transfer their knowledge in a scientific setting.

(c) Knowledge and skills.

(1) The student, for at least 40% of instructional time, conducts field experiments, laboratory investigations, or approved supervised experience programs using safe, environmentally appropriate, and ethical practices. The student is expected to:

(A) demonstrate safe practices during field and laboratory investigations; and

(B) demonstrate an understanding of the use and conservation of resources and proper disposal and recycling of spent resources.

(2) The student analyzes plant and soil science as related to plant and soil relationships affecting the production of food and fiber. The student is expected to:

(A) recognize the importance and interrelationships of soil and plants; and

(B) practice soil and plant evaluation as it applies to agricultural and urban settings.

(3) The student demonstrates the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of plant systems;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation in plant systems;

(C) demonstrate knowledge of personal and occupational safety practices in the workplace; and

(D) identify employer expectations, appropriate work habits, and good citizenship skills.

(4) The student develops an advanced supervised experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

(5) The student develops scenarios for advances in plant and soil science. The student is expected to:

(A) design, conduct, and complete research in a laboratory or field activity to solve problems in plant and soil science;

(B) use charts, tables, and graphs to prepare written summaries of results and data obtained in a laboratory or field activity;

(C) organize, analyze, evaluate, make inferences, and predict trends from resulting data; and

(D) communicate valid outcomes and solutions.

(6) The student explains the relationship of biotic and abiotic factors within habitats and ecosystems. The student is expected to:

(A) identify native plants, assess their role in an ecosystem, and compare them to plants in other ecosystems;

(B) make observations and compile data about fluctuations in abiotic cycles and evaluate their effects on local ecosystems;

(C) evaluate the impact of human activity such as methods of pest control, hydroponics, and sustainable agriculture on ecosystems; and

(D) predict how the introduction, removal, or re-introduction of an organism may affect the food chain and existing populations.

(7) The student analyzes soil science as related to food and fiber production. The student is expected to:

(A) explain soil formation;

(B) evaluate the properties and nature of soils;

(C) recognize the importance of conservation of soil and agencies involved in conservation;

(D) perform soil management practices such as tillage trials and sustainable soil management; and

(E) practice soil evaluations as related to experiential activities such as land judging.

(8) The student describes the relationship between resources within environmental systems. The student is expected to:

(A) summarize methods of land use and management;

(B) identify sources, use, quality, and conservation of water;

(C) explore the use and conservation of renewable and non-renewable resources;

(D) analyze and evaluate the economic significance and interdependence of components of the environment;

(E) evaluate the impact of human activity and technology on soil fertility and productivity;

(F) analyze and describe the effects on environments by events such as fire, hurricanes, deforestation, mining, population growth, and urban development; and

(G) explain how regional changes in the environment may have a global effect.

(9) The student describes the origin and use of water in a watershed. The student is expected to:

(A) identify sources and calculate the amount of water in a watershed, including ground and surface water;

(B) research and identify the type of water used in a watershed;

(C) analyze water quality in a watershed; and

(D) identify and use methods to evaluate water quantity available in a watershed.

(10) The student maps the process of soil formation as influenced by weathering, including erosion processes due to water, wind, and mechanical factors influenced by climate. The student is expected to:

(A) illustrate the role of weathering in soil formations;

(B) distinguish chemical weathering from mechanical weathering; and

(C) identify geological formations that result from differing weathering processes.

(11) The student describes the dynamics of a watershed. The student is expected to:

(A) identify the characteristics of a local watershed such as average annual rainfall, runoff patterns, aquifers, location of water basins, and surface reservoirs; and

(B) analyze the impact of floods, drought, irrigation, urbanization, and industrialization in a watershed.

(12) The student explains how petroleum energy resources affect agriculture. The student is expected to:

(A) research and describe the origin of fossil fuels such as coal, oil, and natural gas;

(B) analyze issues regarding the use of fossil fuels and other non-renewable energy sources or alternative energy sources; and

(C) analyze the significance and economic impact of the use of fossil fuels and alternative energy sources.

(13) The student evaluates components of plant science as it relates to crop production. The student is expected to:

(A) analyze plant physiology, genetics, and reproduction;

(B) recognize characteristics of quality seeds such as mechanical damage, viability, and grade;

(C) identify plant pests and diseases and their causes, prevention, and treatment;

(D) perform plant management practices such as germination tests, plant spacing trials, and fertilizer tests; and

(E) measure trends in crop species and varieties grown locally in Texas and the United States and how this affects agriculture and consumers.

(14) The student identifies how plants grow and how specialized cells, tissues, and organs develop. The student is expected to:

(A) compare cells from different parts of the plant, including roots, stems, and leaves, to show specialization of structures and functions; and

(B) sequence the levels of organization in multicellular organisms that relate the parts to each other and the whole.

(15) The student diagrams the structure and function of nucleic acids in the mechanism of genetics. The student is expected to:

(A) describe components of deoxyribonucleic acid and illustrate how information for specifying the traits of an organism is carried in deoxyribonucleic acid;

(B) identify and illustrate how changes in deoxyribonucleic acid cause phenotypic or genotypic changes;

(C) compare and contrast genetic variations observed in plants and animals; and

(D) compare the processes of mitosis and meiosis and their significance.

(16) The student demonstrates skills related to the human, scientific, and technological dimensions of crop production and the resources necessary for producing domesticated plants. The student is expected to:

(A) describe the growth and development of major crops;

(B) apply principles of genetics and plant breeding;

(C) examine the development of crop varieties through the origin of agriculture; and

(D) design and conduct experiments to support known principles of genetics.

(17) The student explains the chemistry involved in plants at the cellular level. The student is expected to:

(A) compare the structures and functions of different types of organic molecules such as carbohydrates, lipids, proteins, and nucleic acids;

(B) compare the energy flow in photosynthesis to the energy flow in cellular respiration; and

(C) investigate and identify the effect of enzymes on plant cells.

(18) The student identifies the sources and flow of energy through environmental systems. The student is expected to:

(A) summarize forms and sources of energy;

(B) explain the flow of energy in an environment;

(C) investigate and explain the effects of energy transformations in an ecosystem; and

(D) investigate and identify energy interaction in an ecosystem.

§130.22. *Agricultural Mechanics and Metal Technologies (One-Half to One Credit).*

(a) General requirements. This course is recommended for students in Grades 10-12. Students may take this course in Grade 9 if they have met the recommended prerequisite of Principles of Agriculture, Food, and Natural Resources.

(b) Introduction. To be prepared for careers in agricultural power, structural, and technical systems, students need to 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. This course 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.

(c) Knowledge and skills.

(1) The student learns the employability skills of a successful employee to meet current industry standards and society. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of power, structural, and technical agricultural systems, including how to search and obtain employment, what qualifications are required for varying career fields, and how to advance in a position;

(B) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation of power, structural, and technical agricultural systems;

(C) examine licensing, certification, and credentialing requirements to maintain compliance with industry requirements;

(D) demonstrate knowledge of personal and occupational health, safety, and first-aid practices in the industry; and

(E) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

(3) The student follows operating instructions for tools and equipment to perform a given task. The student is expected to:

(A) select and use the appropriate hand and power tools to perform a given task, maintain tools, and store tools; and

(B) select and use measuring and marking devices.

(4) The student identifies and performs electric wiring skills. The student is expected to:

(A) identify principles of electric wiring and wiring terminology;

(B) perform and install electric wiring components and fixtures to comply with government regulations and applicable codes; and

(C) maintain electric motors.

(5) The student performs plumbing skills. The student is expected to:

(A) identify and select plumbing tools and fixtures;

(B) install plumbing equipment and fixtures to comply with government regulations and applicable codes; and

(C) maintain water systems.

(6) The student performs concrete construction skills. The student is expected to:

(A) project cost estimates for materials and construct forms; and

(B) reinforce, place, finish, and cure concrete.

(7) The student performs carpentry skills. The student is expected to:

(A) identify materials used in agricultural construction;

(B) identify elements of projected cost estimate and prepare a bid package for a planned project;

(C) demonstrate basic carpentry skills; and

(D) paint and protect with coatings.

(8) The student identifies fencing methods. The student is expected to:

(A) select fencing materials; and

(B) plan and install fences.

(9) 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.

(10) The student knows metal merging technology and processes relating to assembly of equipment in agricultural systems operations. The student is expected to:

(A) select and maintain appropriate tools, equipment, and facilities; and

(B) identify and determine properties, types, and uses of metal.

(11) The student plans and performs cost-effective construction techniques. The student is expected to:

(A) analyze site, equipment, and permit requirements;

(B) observe or 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.

§130.23. Agricultural Facilities Design and Fabrication (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 11-12.

(b) Introduction. To be prepared for careers in mechanized agriculture and technical systems, students attain knowledge and skills related to agricultural facilities design and fabrication. Students explore career opportunities, entry requirements, and industry expectations. To prepare for success, students reinforce, apply, and transfer their academic knowledge and technical skills in a variety of settings.

(c) Knowledge and skills.

(1) The student learns and applies the employability characteristics of a successful employee. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of mechanized agriculture;

(B) apply competencies related to resources, information, interpersonal skills, and systems of operation of mechanized agriculture;

(C) demonstrate knowledge of personal and occupational health and safety practices in the workplace;

(D) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and

(E) research licensing, certification, and credentialing requirements.

(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 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 explores the different types of power systems used in agricultural facilities. 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.

(5) 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) form and pour concrete slabs;

(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; and

(G) install doors, windows, and roofing materials.

(6) The student demonstrates metal construction techniques related to agricultural design and fabrication. The student is expected to:

(A) explain the operations of safe oxy-fuel cutting; and

(B) demonstrate safe electrical welding.

(7) The student develops an advanced supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

§130.24. Agricultural Power Systems (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. To be prepared for careers in agricultural power, structural, and technical systems, students should 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 should have opportunities to learn, reinforce, apply, and transfer their knowledge and technical skills in a variety of settings. This course is designed to develop an un-

derstanding of power and control systems as related to energy sources, small and large power systems, and agricultural machinery.

(c) Knowledge and skills.

(1) The student outlines the employability skills of a successful employee to meet current industry and societal standards. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the field of power, structural, and technical systems;

(B) apply competencies related to resources, information, interpersonal skills, problem solving, and critical thinking in power, structural, and technical systems;

(C) examine licensing, certification, and credentialing requirements to maintain compliance with industry requirements;

(D) demonstrate knowledge of personal and occupational health and safety practices in the workplace; and

(E) identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.

(2) The student develops an improved supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) participate in youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

(3) The student connects power generation to differing energy sources. The student is expected to:

(A) discuss 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) discuss the efficiency of power generation systems that use various energy sources.

(4) 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 dynameters;

(C) set up and adjust tools and equipment such as dynameters, 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.

(5) The student selects, operates, and maintains small engines. The student is expected to:

(A) describe principles of operation of internal combustion engines and related power systems and parallel them to shared operations and theories in multiple cylinder engines;

(B) disassemble and reassemble small engines;

(C) select, maintain, and troubleshoot small engines; and

(D) research small engine industry certifications.

(6) 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 on varying types of machines and equipment such as bearings, hydraulics, seals, chains, and drives;

(C) ensure the presence and function of safety systems and hardware on machinery and equipment such as guards and shields;

(D) calibrate metering, monitoring, and sensing equipment on various equipment such as tillage, harvest, transport, and haying; and

(E) perform pre-operation inspection and appropriate start-up procedures, identify causes of malfunctions and failures, perform scheduled preventive maintenance, and safely operate equipment.

(7) 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 systems, including shrouds, screens, filters, piping, after-coolers, air induction systems, manifolds, exhausts, and mufflers;

(C) select lubricants and apply appropriate lubrication as required by maintenance schedules on varying lubrication systems;

(D) identify and maintain varying fuel systems, power trains, and hydraulic systems used on farm tractors;

(E) explain charging, starting, operating, and igniting direct current electrical systems as well as troubleshoot simple problems with a digital multimeter;

(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.

(8) The student monitors and controls electrical systems as related to agricultural machines and equipment. The student is expected to:

(A) use various meters and test equipment such as digital multimeters to collect data and troubleshoot electrical systems;

(B) employ appropriate techniques for applying devices, controls, and grounding in electrical systems;

(C) employ codes and regulations relevant to varying applications 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.

(9) The student implements control systems as related to agricultural machines and equipment. The student is expected to:

(A) decipher 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 devices or troubleshooting devices.

(10) 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.

(11) 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 as they apply to power and control systems and their component controls.

§130.25. Practicum in Agriculture, Food, and Natural Resources (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. 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 Agriculture, Food, and Natural Resources cluster. Recommended prerequisite: a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources cluster.

(b) Introduction. The practicum is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the na-

ture and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories.

(c) 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, including, punctuality, time management, initiative, and cooperation;

(C) value and use constructive criticism and critical feedback from supervisor and peers;

(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 dress, grooming, and personal protective equipment as appropriate; and

(G) comply with practicum setting safety 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 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.

(3) The student demonstrates leadership and teamwork skills 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 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 shared 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 in order to accomplish objectives and tasks;

(G) use positive interpersonal skills to negotiate and work cooperatively with others; and

(H) demonstrate respect for individuals, including those from different cultures, genders, and backgrounds, 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 sites, or technical materials to review and apply information sources for occupational tasks;

(D) evaluate the reliability of information from informational texts, Internet sites, or technical materials and resources;

(E) interpret verbal and nonverbal cues and 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 develops management skills for agricultural resources. The student is expected to:

(A) discuss the importance of agricultural and natural resources to individuals and society;

(B) develop long-range land, water, and air quality management plans;

(C) practice equipment maintenance procedures;

(D) analyze the cost and maintenance of tools, equipment, and structures used in agriculture;

(E) describe and develop marketing strategies for agricultural and natural resources;

(F) decide between replacement, maintenance, repair, and reconditioning of agricultural vehicles and machinery; and

(G) describe and perform hazard analysis and follow safety laws.

(6) The student demonstrates technical knowledge and skills required to pursue a career in the Agriculture, Food, and Natural Resources cluster. The student is expected to:

(A) develop advanced technical knowledge and skills related to the personal occupational objective;

(B) evaluate strengths and weaknesses in technical skill proficiency;

(C) explain the principles of safe operation of tools and equipment related to the practicum; and

(D) pursue opportunities for licensure or certification relating to chosen career path.

(7) The student develops an advanced supervised agriculture experience program as it relates to agriculture, food, and natural resources. The student is expected to:

(A) plan, propose, conduct, and evaluate entrepreneurship; placement; exploratory; research, either experimental or analytical; improvement; supplementary; laboratory-based; or other identified, supervised agricultural experience as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to a supervised experience;

(C) design and use a customized record-keeping system for the individual supervised experience;

(D) employ youth leadership opportunities to create a well-rounded experience program in agriculture; and

(E) produce a challenging approach for a local program of activities in agriculture.

(8) The student documents technical knowledge and skills. The student is expected to:

(A) update 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) resumé;

(vii) samples of work; and

(viii) evaluation from the practicum supervisor; and

(B) present the portfolio to all interested stakeholders such as in a poster presentation.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

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For further information, please call: (512) 475-1497



## SUBCHAPTER B. ARCHITECTURE AND CONSTRUCTION

### 19 TAC §§130.41 - 130.62

The State Board of Education (SBOE) proposes new §§130.41-130.62, concerning the Texas essential knowledge and skills (TEKS) for architecture and construction. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485

further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.41. Implementation of Texas Essential Knowledge and Skills for Architecture and Construction.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.42. Principles of Architecture and Construction (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) Introduction. Principles of Architecture and Construction provides an overview to the various fields of architecture, interior design, construction science, and construction technology. Achieving proficiency in decision making and problem solving is an essential skill for career planning and lifelong learning. Students use self-knowledge, educational, and career information to set and achieve realistic career and educational goals. Job-specific, skilled training can be provided through the use of training modules to identify career goals in trade and industry areas. Safety and career opportunities are included, in addition to work ethics and job-related study in the classroom such as communications; problem solving and critical thinking; Information Technology Applications; systems; safety, health, and environmental; leadership and teamwork; ethics and legal responsibilities; employability and career development; technical skills; introduction to hand tools; introduction to power tools; basic rigging; and reading technical drawings.

(c) Knowledge and skills.

(1) The student performs mathematical operations to complete tasks such as estimating materials and supplies. The student is expected to:

(A) use appropriate geometric formulas and calculations to determine areas and volumes of various structures and estimate materials and supplies;

(B) use appropriate formulas and calculations to determine percentages and decimals and use percentages and decimals to perform measurement tasks;

(C) use appropriate formulas and calculations to determine ratios, fractions, and proportion measures and use ratios, fractions, and proportion measures to perform measurement tasks; and

(D) use dimensions, spaces, and structures calculations to estimate materials and supplies.

(2) The student performs 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 job site safety;

(B) differentiate between incompatible and compatible substances;

(C) prevent the mixing of incompatible substances;

(D) describe the chemical process that occurs when using common construction materials to maintain workplace and job site safety;

(E) apply chemical processes in relation to environmental conditions; and

(F) apply chemical processes in relation to construction building materials.

(4) The student reads, understands, and responds to English language technical documents to effectively accomplish assignments. The student is expected to:

(A) read, interpret, and use technical and workplace documents to accomplish workplace and job site assignments;

(B) read and understand industry-specific terminology;

(C) interpret workplace documents;

(D) use verbal or written processes to report key information;

(E) use technology to transmit reports;

(F) use written communications such as written estimates, work orders, and memos; and

(G) read and follow technical instructions and manuals.

(5) The student writes clear and effective English to prepare information. The student is expected to:

(A) complete reports and documents to comply with project requirements;

(B) compose an accurate and organized diary or log of work;

(C) write reports and documents such as estimates, permits, memos, and technical reports; and

(D) write reports and work orders that meet industry standards.

(6) The student uses industry-specific verbal and visual skills to accomplish effective communications. The student is expected to:

(A) match verbal and visual communications to industry-specific situations; and

(B) use correct terminology to convey verbal and visual communications.

(7) The student listens attentively and speaks clearly to convey information correctly. The student is expected to:

(A) confirm understanding of verbal and visual instructions;

(B) ask relevant questions concerning details of instructions; and

(C) perform assignments as requested.

(8) The student listens to and speaks with a variety of individuals to enhance communications skills. The student is expected to:

(A) speak succinctly and clearly to convey information;

(B) speak so that others can understand and carry out information presented;

(C) provide verbal instructions; and

(D) listen attentively to spoken messages to respond to information.

(9) 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) apply relationship skills in a variety of situations;

(D) define customer and client satisfaction; and

(E) evaluate customer and client satisfaction.

(10) The student identifies the relationship between available resources and requirements of a problem to accomplish realistic planning. The student is expected to:

(A) estimate resources and materials required for a specific problem, including time-management, labor-management, job-management, and job-site obligations in order to effectively plan;

(B) estimate correct amount of required resources and materials;

(C) evaluate feasibility of alternative suggestions;

(D) implement appropriate alternatives;

(E) use available resources and materials effectively to complete a project or resolve a problem;

(F) evaluate waste of resources and materials;

(G) evaluate necessity for additional resources and materials;

(H) determine alternative solutions for a specific problem in order to effectively plan;

(I) evaluate feasibility of alternative suggestions; and

(J) implement appropriate alternatives.

(11) 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 to reflect an unexpected change;

(F) modify existing schedules to reflect an unexpected change;

(G) identify and assess critical situations as they arise to resolve issues;

(H) evaluate potential solutions and determine the best solution;

(I) appraise critical situations and implement appropriate responses;

(J) provide a project update to track changes necessitated by unexpected events and conditions; and

(K) present verbal or written status reports on the project.

(12) 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 to keep stakeholders up to date; and

(B) present a verbal or written status report on the project.

(13) The student uses technology tools specific to architecture and construction to access, manage, integrate, and create information. The student is expected to:

(A) manage personal schedule and contact information;

(B) create a tasks list;

(C) manage daily, weekly, and monthly schedules using an application;

(D) manage personal and professional contact information;

(E) create memos and notes;

(F) create personal reminders;

(G) create and send notes, informal memos, and reminders using applications; and

(H) use electronic mail applications.

(14) The student uses email to communicate within and across organizations. The student is expected to:

(A) access an email system using login and password functions;

(B) access email messages received;

(C) create email messages in accordance with established business standards such as grammar, word usage, spelling, sentence structure, clarity, and etiquette;

(D) practice email etiquette;

(E) send email messages;

(F) use email to share files and documents;

(G) access email attachments;

(H) attach documents to messages;

(I) save email messages and attachments; and

(J) practice contamination protection strategies for email.

(15) The student uses Internet applications. The student is expected to:

(A) search for information and resources;

(B) select appropriate search engines;

(C) select appropriate search procedures and approaches;

(D) locate information using search engines and Boolean logic;

(E) navigate websites using software functions;

(F) access and evaluate Internet resources;

(G) access business and technical information using the Internet;

(H) access commercial, government, and education resources; and

(I) evaluate Internet resources for accuracy of information.

(16) 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.

(17) 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.



(18) 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.

(19) The student uses collaborative applications. The student is expected to:

- (A) facilitate group work through management of shared schedule and contact information;
- (B) manage daily, weekly, and monthly schedules using an application; and
- (C) maintain a shared database of contact information.

(20) The student uses computer operations applications. The student is expected to:

- (A) manage computer operations;
- (B) apply basic commands of operating system software;
- (C) employ desktop operating skills;
- (D) manage file storage;
- (E) apply appropriate file and disk management techniques;
- (F) differentiate between files and directories;
- (G) determine file organization; and
- (H) use system utilities for file management.

(21) The student uses computer-based equipment containing embedded computers or processors used to control electromechanical devices. The student is expected to:

- (A) operate computer-driven equipment and machines;
- (B) secure needed supplies and resources;
- (C) follow power-up and log-on procedures;
- (D) respond to system messages using a console device;
- (E) run applications in accordance with processing procedures;
- (F) follow log-off and power-down procedures;
- (G) use installation and operation manuals;
- (H) access needed information using appropriate reference materials;
- (I) troubleshoot computer-driven equipment and machines and access support as needed;
- (J) test a system using diagnostic tools and software;
- (K) repair or replace malfunctioning hardware;
- (L) reinstall software as needed;
- (M) recover data files; and
- (N) restore system to normal operating standards.

(22) 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) follow governmental regulations and building codes;
- (C) use information given in regulations and codes correctly;
- (D) pass job inspections and comply with regulations at all times;
- (E) monitor activities to comply with governmental and other applicable safety regulations such as the Environmental Protection Agency and Occupational Safety and Health Administration;
- (F) read and discuss information on Occupational Safety and Health Administration, Environmental Protection Agency, and other safety regulations;
- (G) pass safety inspections and comply with regulations at all times;
- (H) use Material Safety Data Sheet information to manage and dispose of hazardous materials;
- (I) identify environmental hazards to promote safety; and
- (J) follow safe practices relating to environmental hazards.

(23) The student examines the roles and responsibilities of technicians and professionals to complete a project. The student is expected to:

- (A) plan, organize, schedule, and manage a project or job to optimize workflow sequence;
- (B) report results of the project or job;
- (C) use time-management skills to schedule a project or job;
- (D) identify a timeline required to complete a project or job;
- (E) evaluate efficiency and effectiveness of a project or job;
- (F) recognize relationships between technicians and professionals to facilitate smooth workflow;
- (G) coordinate work between various occupations;
- (H) incorporate job functions in the reporting chain of supervision; and
- (I) evaluate the safety issues and responsibilities managed by each level of supervision.

(24) 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.

(25) 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.

(26) The student observes rules and regulations to comply with personal and occupational health and safety standards. The student is expected to:

(A) align 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;

(D) use appropriate safety practices and equipment;

(E) select, inspect, and use personal protective equipment such as respiratory protection and fall protection equipment to ensure a safe environment;

(F) inspect personal protective equipment to ensure safety;

(G) report defects found in personal protective equipment;

(H) wear appropriate personal protective equipment;

(I) employ hierarchy and workflow of the site to ensure safety;

(J) perform site safety procedures at all times; and

(K) use various safety barriers.

(27) The student establishes specific goals to manage project assignments in a timely manner. The student is expected to:

(A) establish project goals in order to meet project specifications and deadlines; and

(B) organize work teams to effectively manage assignments.

(28) 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.

(29) 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.

(30) 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) read and explain the various aspects of service contracts to ensure compliance;

(E) evaluate and follow service contracts;

(F) recognize the relationship between the various parties to a contract in order to interpret responsibilities;

(G) fulfill contractual roles and responsibilities;

(H) recognize the definition of specialized words or phrases to fully understand documents and contracts;

(I) use industry jargon or terminology appropriately;

(J) use industry acronyms correctly;

(K) use words with multiple meanings correctly in context; and

(L) use ethical and legal standards to avoid conflicts of interest.

(31) The student recognizes legal and ethical relationships between employees and employers to establish workplace and job site rules, regulations, and guidelines. The student is expected to:

(A) access appropriate resources to identify the roles, rights, and responsibilities of an employee and an employer; and

(B) examine insurance documentation to determine liability issues associated with a job.

(32) 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.

(33) 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) implement a career advancement plan;

(E) review progress of a career advancement plan;

(F) maintain positive interpersonal skills to enhance advancement potential;

(G) perform quality work as measured by a performance evaluation;

(H) pursue education and training opportunities to acquire skills necessary for career advancement;

(I) document successful completion of education and training opportunities;

(J) participate in professional development opportunities such as professional organizations and associations, trade shows, and seminars;

(K) read professional journals, magazines, manufacturers' catalogs, industry publications, and Internet sites to keep current on industry trends; and

(L) identify and prepare for new and emerging occupations, practices, and procedures as well as declining occupations and practices.

(34) 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.

(35) The student recognizes the responsibilities and personal characteristics of a professional in architecture and construction to develop personal goals for professionalism. The student is expected to:

(A) research information to identify appropriate responsibilities and personal characteristics;

(B) practice the responsibilities and characteristics of a professional in architecture and construction;

(C) identify all critical functions;

(D) document customer satisfaction;

(E) present a professional image in the workplace or job site to enhance career advancement;

(F) maintain appropriate professional memberships; and

(G) follow rules, regulations, and guidelines.

(36) The student initiates and maintains a career portfolio to document knowledge, skills, and abilities. The student is expected to:

(A) select educational and work history highlights to create a personal resumé;

(B) develop a resumé using word processing technology;

(C) contact professional references to acquire recommendations;

(D) obtain appropriate letters of recommendation;

(E) maintain a record of work experiences, licenses, certifications, and education to build a portfolio;

(F) document work experience;

(G) document receipt of licenses, certifications, and credentialing; and

(H) document completion of education and training.

(37) 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.

(38) 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) properly 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) use state-of-the-art tools, equipment, materials, technologies, and methodologies.

(39) The student recognizes, identifies, and discusses the appropriate safe use and maintenance of tools used in construction careers. The student is expected to:

(A) recognize, identify, and discuss the appropriate safe use and maintenance of some of the commonly used power tools in construction such as hammers, screwdrivers, sledgehammers, ripping bars and nail pullers, pliers and wire cutters, rulers and other measuring tools, levels, squares, plumb bob, chalk lines, bench vises, clamps, saws, files and rasps, chisels and punches, wrenches, sockets and ratchets, torque wrenches, wedges, utility knives, chain falls and come-alongs, wire brushes, and shovels;

(B) identify and describe the use of slings and common rigging hardware;

(C) describe basic inspection techniques and rejection criteria used for slings and hardware;

(D) describe basic hitch configurations and their proper connections;

(E) describe basic load-handling safety practices; and

(F) demonstrate proper use of American National Standards Institute hand signals.

§130.43. Interior Design (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Algebra I, Principles of Architecture and Construction, or Architectural Design.

(b) Introduction. Interior Design is a technical course that addresses psychological, physiological, and sociological needs of individuals by enhancing the environments in which they live and work. Individuals use knowledge and skills related to interior and exterior environments, construction, and furnishings to make wise consumer decisions, increase productivity, and compete in industry.

(c) 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 cultures and regions;

(B) describe factors affecting housing choices;

(C) describe the relationship of housing and family economics;

(D) assess the impact of demographic trends and psychological, physiological, and social needs on 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) explain 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 and leasing 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) explain the effect of housing conditions on health and safety;

(B) develop a plan for detecting safety hazards and maintaining a safe home; and

(C) 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 planning and consumer decisions related to housing. The student is expected to:

(A) identify architectural styles exemplified in housing;

(B) summarize considerations for housing site selection;

(C) evaluate basic housing construction and finishing considerations; and

(D) 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) describe the interrelationship of the housing industry and 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 larger environment; and

(B) determine techniques, materials, and technology applications that can be used in housing to conserve energy and other resources.

(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) determine drafting techniques, including scaled drawings, that facilitate space planning;

(D) determine the effect of technology on interior design practices;

(E) differentiate design practices to meet individual, business, and special needs; and

(F) describe energy conservation practices that affect interior design and 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.

(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) explain selection and care of ceilings; and

(D) evaluate the 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) describe the relationship of interior decisions to individual and family needs and wants;

(B) describe the influences of demographics, society, and culture on interior design decisions;

(C) explain the relationship of economics to interior environments and propose strategies for controlling costs and allocating resources; and

(D) 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) describe characteristics of period styles;

(B) determine the influence of period styles on interior design;

(C) summarize selection and care of quality furniture;

(D) assess aesthetic and functional aspects of furniture;

and

(E) describe the impact of technology on furniture.

(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;

(C) explain the safe use and care of appliances; and

(D) describe the impact of technology on 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;

(B) describe criteria for selection of accessories;

(C) analyze care of accessories; and

(D) practice guidelines for arranging 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 technology to create a bill of materials;

(E) use technology to create and modify architectural interior drawings; and

(F) plot architectural interior drawings for presentation.

(16) The student develops and organizes ideas from the surroundings. The student is expected to:

(A) illustrate ideas for interior design from direct observation, experiences, and imagination; and

(B) compare and contrast the use of interior design elements (color, texture, form, line, space, and value) and interior design principles (emphasis, pattern, rhythm, balance, proportion, and unity) in personal interior design artworks and those of others using vocabulary accurately.

(17) The student expresses ideas through original interior design projects using a variety of media with appropriate skill. The student is expected to:

(A) create visual solutions by elaborating on direct observation, experiences, and imagination;

(B) create designs for practical applications; and

(C) demonstrate effective use of interior design media and tools in design, drawing, painting, printmaking, and sculpture such as model building.

(18) The student maintains a career portfolio to document knowledge, skills, and abilities. The student is expected to:

(A) select educational and work history highlights to create a personal resumé;

(B) develop a resumé using word processing technology;

(C) contact professional references to acquire recommendations;

(D) obtain appropriate letters of recommendation;

(E) maintain a record of work experiences, licenses, certifications, and education to build a portfolio;

(F) document work experience;

(G) document receipt of licenses, certifications, and credentialing; and

(H) document completion of education and training.

(19) 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 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.

§130.44. Advanced Interior Design (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Geometry, Principles of Architecture and Construction, Interior Design, Architectural Design, or Advanced Architectural Design.

(b) Introduction. Advanced Interior Design is a technical laboratory course that includes the knowledge of the employability characteristics, principles, processes, technologies, communication, tools, equipment, and materials related to interior spatial design.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and preparation requirements in the field of architectural interior design;

(B) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(C) identify 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 government regulations; and

(F) maintain a project portfolio that documents interior design projects using a variety of multimedia techniques with a professional resumé.

(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, management, and customers;

(B) successfully complete work orders and related paperwork;

(C) estimate supplies, materials, and labor costs; 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) use interior design theory, layout and design lines, symbols, and drawings;

(B) demonstrate knowledge of the theory and use of color in interior design; and

(C) 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) safely use tools, materials, and equipment commonly employed in the field of architectural interior design;

(B) properly handle and dispose of environmentally hazardous materials used in the field of architectural interior design; and

(C) demonstrate knowledge of new and emerging technologies that may affect the field of architectural interior design.

(5) The student applies the concepts and skills of interior design to simulated and actual work situations. The student is expected to:

(A) use architectural lettering techniques;

(B) render freehand commercial or residential interior design working drawings;

(C) draw a single-line floor plan from design development techniques for a residential or commercial project;

(D) choose interior furnishings and finish materials for a residence or a commercial office interior;

(E) prepare and draw dimension plans for construction documents;

(F) produce interior drawings using both 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, but not limited to, job shadowing, mentoring, or apprenticeship training programs;

(I) recognize sustainable design as it relates to interior design;

(J) define green architecture as related to the field of interior design;

(K) customize screen menus in drawing programs;

(L) use industry accepted computer-aided drafting skills;

(M) research the Americans with Disabilities Act; and

(N) research the guidelines for kitchen and bath design as defined by The National Kitchen and Bath Industry.

(6) 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;

(C) recognize traditional, period, and design styles of upholstery; and

(D) identify different fabrics, materials, and finishes and their characteristics.

(7) 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) safely use tools, materials, and equipment commonly employed in the field of furniture repair and upholstery services;

(B) properly handle and dispose of environmentally hazardous materials used in the field of furniture repair and upholstery; and

(C) demonstrate knowledge of new and emerging technologies that may affect the field of furniture repair and upholstery services.

(8) The student applies the concepts and skills of interior design to simulated and actual work situations. The student is expected to:

(A) use 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, mars, 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 filling, padding, springs, and fabric;

(G) apply the essential knowledge and skills in furniture repair and upholstery services to career preparation learning experiences, including, but not limited to, job shadowing, mentoring, and apprenticeship training;

(H) use problem-solving skills to analyze a situation to identify a problem to be solved;

(I) break a complex problem into component parts that can be analyzed and solved separately;

(J) strive for accuracy and precision;

(K) work independently;

(L) work collaboratively;

(M) research an architectural project;

(N) design and present an effective interior design product; and

(O) present a final interior design product for critique.

§130.45. Practicum in Interior Design (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid capstone experience or independent study course for students participating in a coherent sequence of career and technical education courses in the field of interior design. Instruction may be delivered through laboratory training or through career preparation delivery arrangements.

(b) Introduction.

(1) This is an occupationally-specific course designed to provide classroom technical instruction. Job-specific skilled training is provided through the use of laboratory training or training plans by local training sponsors in areas compatible with identified career goals in interior design. In addition, students are expected to develop knowledge and skills described in one of the training specialization options specified in paragraph (2) or (3) of this subsection.

(2) Housing, furnishings, and equipment construction. Students whose training emphasizes housing, furnishings, and equipment production are expected to demonstrate advanced knowledge and skills in this area.

(3) Housing, furnishings, and equipment management and services. Students whose training emphasizes housing, furnishings, and equipment management and services are expected to demonstrate advanced knowledge and skills in this area.

(c) Knowledge and skills.

(1) The student determines the use of elements and principles of design in residential and nonresidential environments and their furnishings. The student is expected to:

(A) identify the elements of design;

(B) exhibit how the elements of design can create various effects;

(C) list the principles of design;

(D) explain how the principles and elements of design differ;

(E) apply guidelines for coordinating furnishings; and

(F) 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;

(C) describe trends in materials, accessories, lighting, and use of space;

(D) illustrate appropriate window treatments for specific windows;

(E) evaluate cost considerations 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) use sources of information on changing 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 and prevention practices;

(C) summarize laws pertaining to safety and sanitation practices;

(D) demonstrate appropriate responses to emergency situations; and

(E) 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) appraise characteristics of good workmanship in furnishings products;

(B) use 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) explain 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 resumé.



(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) 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.

(12) The student demonstrates ethical and legal practices for careers in the housing, furnishings, and equipment industries. The student is expected to:

(A) 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.

§130.46. Architectural Design (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Algebra I, Geometry, and Principles of Architecture and Construction.

(b) Introduction. In Architectural Design, students gain knowledge and skills specific to those needed to enter a career in architecture and construction or prepare a foundation toward a postsecondary degree in architecture, construction science, drafting, interior design, and landscape architecture. Architectural design includes the knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for commercial or residential architectural purposes.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful professional in the modern workplace. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and preparation requirements in the field of architectural drafting;

(B) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(C) identify employers' expectations and appropriate work habits;

(D) apply the competencies related to resources, information, systems, and technology in appropriate settings and situations; and

(E) demonstrate knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate government regulations.

(2) 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) use 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, management, and customers;

(F) successfully 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) use descriptive geometry related to auxiliary views, revolutions, intersections, and piping drawings.

(3) 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.

(4) The student knows the function and application of the tools, equipment, technologies, and materials used in architectural drawing. The student is expected to:

(A) safely use the tools, materials, and equipment commonly employed in the field of architectural computer-aided drafting;

(B) properly handle and dispose of environmentally hazardous materials; and

(C) demonstrate knowledge of new and emerging technologies that may affect the field of architecture.

(5) 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 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) use architectural lettering techniques;  
(J) develop preliminary sketches of a commercial 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; and

(S) assemble an architectural design in three dimensions.

(6) The student applies the concepts and skills of the profession to simulated or actual 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 a computer system to create a bill of materials;

(E) use a computer system to create and modify architectural drawings; and

(F) plot architectural drawings for presentation.

(7) 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, and 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.

(8) 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.

(9) 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 and vocational opportunities in architecture.

(10) 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 and others to form precise conclusions about formal qualities, historical and cultural contexts, intents, and meanings.

(11) 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 architectural design and related fields;

(B) propose short-term and long-term career goals;

(C) describe technology used in architectural careers; and

(D) maintain a project portfolio that documents experience by using graphic or written documentation of architectural-related projects and a professional resumé that should include select educational and work history; professional references; appropriate letters of recommendation, record of work experiences, licenses, and certifications; receipt of licenses, certifications, and credentialing; and completion of education and training.

(12) 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) use mathematical equations; and

(C) apply scientific principles and concepts.

(13) The student knows the concept of energy. 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.

§130.47. Advanced Architectural Design (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Principles of Architecture and Construction and Architectural Design or Advanced Interior Design.

(b) Introduction. In Advanced Architectural Design, students gain advanced knowledge and skills specific to those needed to enter a career in architecture and construction or prepare a foundation toward a postsecondary degree in architecture, construction science, drafting, interior design, and landscape architecture. Advanced Architectural design includes the advanced knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for commercial or residential architectural purposes.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in architectural design. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and preparation requirements in the field of architectural drafting;

(B) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(C) identify employers' expectations and appropriate work habits;

(D) apply the competencies related to resources, information, systems, and technology in appropriate settings and situations; and

(E) demonstrate knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate government regulations.

(2) The student relates core academic skills to the requirements of architectural drafting. The student is expected to:

(A) demonstrate effective verbal and written communication skills with individuals from varied cultures, including fellow workers, management, and customers;

(B) successfully complete work orders and related paperwork;

(C) estimate jobs, schedules, and industry standard practices related to legal restrictions;

(D) read and interpret appropriate architectural symbols, schematics, blueprints, work drawings, manuals, and bulletins; and

(E) use descriptive geometry related to auxiliary views, revolutions, intersections, and piping drawings.

(3) 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.

(4) The student knows the function and application of the tools, equipment, technologies, and materials used in architectural computer-aided drafting. The student is expected to:

(A) safely use the tools, materials, and equipment commonly employed in the field of architectural computer-aided drafting;

(B) properly handle and dispose of environmentally hazardous materials used in the field of architectural computer-aided drafting; and

(C) demonstrate knowledge of new and emerging technologies that may affect the field of architectural computer-aided drafting.

(5) 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) use architectural lettering techniques;

(J) develop preliminary sketches of a house plan or commercial interior space;

(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, building elevations, sections, perspectives, and character sketches using design development techniques;

(O) draw scaled wall thickness plans, elevations, and sections;

(P) develop details of footing and foundations 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 United States Green Building Council; and

(S) create a project demonstrating sustainable design as it relates to architectural design as defined by the United States Green Building Council.

(6) 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- and 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 commercial or residential architectural drawings;

(H) plot architectural drawings for presentation;

(I) render three-dimensional objects with applied materials; and

(J) animate a path through a three-dimensional computer-aided project.

(7) 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 equality;

(G) use time-management techniques to develop and maintain work schedules and meet deadlines; and

(H) complete work according to established criteria.

(8) 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.

(9) 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.

(10) The student demonstrates an understanding of architectural history and culture as records of human achievement by examining the connection between twentieth and twenty-first century archi-

ture and art and 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 and vocational opportunities in architecture.

(11) 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.

(12) 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 with a professional resumé.

§130.48. Practicum in Architectural Design (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grade 12. Recommended prerequisite: completion of a coherent sequence in a program area related to the field of architectural design. Instruction may be delivered through laboratory training or through career preparation delivery arrangements.

(b) Introduction. 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.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and preparation requirements for the student's chosen field;

(B) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(C) demonstrate productive work habits and attitudes;

(D) apply the competencies related to resources, information, interpersonal skills, systems, and technology in appropriate settings and situations; and

(E) demonstrate knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate government regulations.

(2) 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, management, and customers;

(B) apply mathematics principles and practices;

(C) apply and identify science principles used in projects; and

(D) read and interpret appropriate schematics, charts, graphs, drawings, blueprints, directions, manuals, bulletins, and regulations.

(3) 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) safely use the hand and power tools and equipment commonly employed in the student's chosen field;

(C) properly handle and dispose of environmentally hazardous materials used in the student's chosen field; and

(D) demonstrate knowledge of new and emerging technologies in the student's chosen field.

(4) The student selects and uses multimedia communication and animation technology to meet specific architectural design needs. The student is expected to:

(A) apply multimedia communication and animation 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.

(5) The student designs multimedia communication and animation 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.

(6) The student produces multimedia communication and animation 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 communications techniques.

(7) 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) follow the appropriate codes, laws, standards, or regulations.

(8) 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.

(9) The student applies communication, mathematics, and science knowledge and skills to job-related activities. The student is expected to:

(A) use written, verbal, and visual communication techniques consistent with industry standards;

(B) use mathematics concepts in communication technology; and

(C) identify and apply science principles.

(10) The student determines employment opportunities and preparation requirements for careers. 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;

(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.

(11) The student demonstrates ethical and legal practices for careers in the architectural-related workplaces. 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 industrial 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, written, or other to a panel of students, teachers, and practitioners in the career concentration;

(F) deliver the project's final product(s) that demonstrate(s) the use of a variety of resources, technologies, and communication skills; and

(G) maintain a project portfolio that documents experience by using graphic or written documentation of architectural-related projects and a professional resumé that should include select educational and work history; professional references; appropriate letters of recommendation; record of work experiences, licenses, and certifications; receipt of licenses, certifications, and credentialing; and completion of education and training.

§130.49. Construction Management (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Algebra I, Geometry, and Principles of Architecture and Construction.

(b) Introduction. In Construction Management, students gain knowledge and skills specific to those needed to enter the work force as carpenters or building maintenance supervisors or build a foundation toward a postsecondary degree in architecture, construction science, drafting, or engineering. Construction Management includes the knowledge of the design techniques and tools related to the management of architectural and engineering projects.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and preparation requirements in the field of construction management;

(B) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(C) identify employers' expectations and appropriate work habits;

(D) apply the competencies related to resources, information, systems, and technology in appropriate settings and situations; and

(E) demonstrate knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate government regulations.

(2) 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, management, and customers;

(B) successfully 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) use descriptive geometry related to auxiliary views, revolutions, intersections, and piping drawings.

(3) The student gains knowledge about building materials used in the construction industry, including lumber, sheet materials, engineered wood products, structural concrete, and structural steel. Additionally, the student learns the various 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 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 describes how a systems model can be used to describe construction activities. 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.

(5) 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 and related 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.

(6) 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.

(7) 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.

(8) 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.

(9) 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;

(C) use a variety of tools, equipment, and machines to construct buildings or structures; and

(D) construct a building or structure.

(10) 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.

(11) The student describes the importance of maintenance in construction. The student is expected to:

(A) handle and store 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.

(12) 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.

(13) The student applies the appropriate codes, laws, standards, or regulations related to construction technology. The student is expected to:

(A) describe the importance of codes, laws, standards, or regulations;

(B) identify areas where codes, laws, standards, or regulations may be required; and

(C) comply with the appropriate codes, laws, standards, or regulations.

(14) The student describes the intended and unintended effects of technological solutions. The student is expected to:

(A) use 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.

(15) 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;

(B) describe how the development and use of construction technology are influenced by past events;

(C) describe change and the factors that affect the adoption or rejection of construction technology; and

(D) describe how and why technology evolves.

(16) 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;

(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.

(17) 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;

(B) determine the most effective strategies to minimize costs;

(C) identify the financial factors associated with starting and operating construction enterprises; and

(D) explain the role of business in a free enterprise system.

(18) The student applies communication, mathematics, and science knowledge and skills to construction activities. The student is expected to:

(A) use written, verbal, and visual communication techniques consistent with industry standards;

(B) use mathematics concepts in construction technology;

(C) identify and apply science principles used in construction technology; and

(D) use the appropriate units of measure.

(19) 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;

(B) demonstrate knowledge of fire ratings in construction materials; and

(C) demonstrate knowledge of the appropriate building codes that apply to residential and commercial construction.

(20) The student knows the function and application of the tools, equipment, technologies, and materials used in construction carpentry. The student is expected to:

(A) safely use hand and power tools and equipment commonly employed in carpentry;

(B) properly handle and dispose of environmentally hazardous materials used in carpentry;

(C) safely use the different types of scaffolding employed in building carpentry; and

(D) demonstrate knowledge of new and emerging technologies that may affect construction carpentry.

(21) The student applies the concepts and skills of the construction industry to simulated and actual work situations. The student is expected to:

(A) square, measure, and cut materials to specified dimensions;

(B) rig and handle different types of loads and use the proper hand signals at the job site;

(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;

(E) install doors, windows, interior and exterior wall covering, and trim; and

(F) apply the essential knowledge and skills in building carpentry to career preparation learning experiences, including, but not limited to, job shadowing, mentoring, and apprenticeship training.

(22) 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 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.

(23) 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 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.

(24) The student gains knowledge about the basics 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) 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:

(i) lay out and construct a floor assembly;

(ii) install bridging;

(iii) install joists for a cantilever-floor;

(iv) install a subfloor using butt-joint plywood or oriented strand board panels; and

(v) install a single floor system using tongue-and-groove plywood or oriented strand board panels.

(25) 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 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) explain how to cut and install ceiling joists on a wood frame building; and

(I) estimate the materials required for frame walls and ceilings.

(26) The student investigates various types of framed roofs. The student is expected to:

(A) understand 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.

(27) 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 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.

(28) 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;

(E) calculate the total rise, number and size of risers, and the number of size of treads required for a given stairway;

(F) layout and cut stringers, risers, and treads; and

(G) build a small stair unit with a temporary handrail.

(29) 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.

(30) 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 technology.

(31) 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 equality;

(G) use time-management techniques to develop and maintain work schedules and meet deadlines; and

(H) complete work according to established criteria.

(32) 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.

(33) 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; and

(C) make prudent choices in the conservation and use of resources and the disposal of materials.

(34) The student solves problems, thinks critically, and makes decisions related to technology. The student is expected to:

(A) use specified 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.

(35) 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; and

(C) solve problems in English and System International (SI) units; and perform unit conversions.

§130.50. Advanced Construction Management (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Construction Management.

(b) Introduction. In Advanced Construction Management, students gain knowledge and skills specific to those needed to enter the workforce as carpenters or building maintenance supervisors or build a foundation toward a postsecondary degree in architecture, construction science, drafting, or engineering. Construction Management includes the knowledge of the design, techniques, and tools related to the management of architectural and engineering projects.

(c) Knowledge and skills.

(1) The student selects and uses the appropriate resources to complete construction tasks. The student is expected to:

(A) apply construction technology to individual or local problems;

(B) identify a problem and determine the appropriate resources needed to solve the problem; and

(C) describe the factors that affect the purchase and use of buildings.

(2) 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) use specified design processes to develop and communicate ideas.

(3) 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 to determine its effectiveness.

(4) 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 where and how the quality of a building can be improved; and

(C) explain the factors that affect the quality of buildings.

(5) The student constructs buildings 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;

(C) use a variety of tools, equipment, and machines to construct buildings; and

(D) construct a building or model of a building.

(6) 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 wastes appropriately; and

(E) recommend improvements in safety procedures.

(7) The student performs basic maintenance on selected construction equipment and machines. The student is expected to:

(A) handle and store tools and materials correctly;

(B) locate and perform manufacturers' maintenance procedures on selected tools, equipment, and machines; and

(C) develop a maintenance plan for selected machines and equipment.

(8) The student manages construction technology projects. The student is expected to:

(A) develop a plan for completing a construction technology project;

(B) identify and describe the resources required to complete a construction project; and

(C) develop a timeline for completing a project.

(9) 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) interpret and follow the appropriate codes, laws, standards, or regulations.

(10) 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.

(11) 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.

(12) The student applies communication, mathematics, and science knowledge and skills to construction activities. The student is expected to:

(A) write technical reports;

(B) make technical presentations to groups of individuals;

(C) identify and use mathematics concepts in construction technology; and

(D) identify and apply science principles used in construction technology.

(13) 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 equality;

(G) use time-management techniques to develop and maintain work schedules and meet deadlines; and

(H) complete work according to established criteria.

(14) 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) 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 forms;

(G) explain the safety procedures associated with the construction and use of concrete forms; and

(H) explain how to erect, plumb, and brace a simple concrete form with reinforcement.

(15) 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.

(16) 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.

(17) The student solves problems, thinks critically, and makes decisions related to construction. The student is expected to:

(A) use 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.

(18) 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 English and System International (SI) units; and

(D) perform unit conversions.

(19) 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 and interpret a free-body diagram for force analysis; and

(D) analyze motion relative to different frames of reference.

(20) 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.

(21) The student knows the concept of waves and vibrations. The student is expected to:

(A) identify and evaluate characteristics of wave motion; and

(B) demonstrate how waves transmit energy.

(22) 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.

(23) 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.

(24) The student knows the concept of radiant energy. The student is expected to:

(A) describe radiation and cite examples;

(B) compare fission and fusion in terms of end products, energy, advantages, and availability; and

(C) compare and contrast different types of radioactive decay.

(25) 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.

(26) 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.

(27) 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.

(28) 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.

(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) 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 equality;

(G) use time-management techniques to develop and maintain work schedules and meet deadlines; and

(H) complete work according to established criteria.

§130.51. Construction Technology (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Architecture and Construction.

(b) Introduction. In Construction Technology, students gain knowledge and skills specific to those needed to enter the work force as carpenters or building maintenance supervisors or prepare for a post-secondary degree in construction management, architecture, or engineering. Students acquire knowledge and skills in safety, tool usage, building materials, codes, and framing.

(c) Knowledge and skills.

(1) The student identifies various employment opportunities in the field of carpentry and the characteristics a carpenter should possess. The student is expected to:

(A) identify job opportunities with 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 career goals.

(2) 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.

(3) 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.

(4) 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.

(5) 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; and

(K) demonstrate the ability to:

(i) lay out and construct a floor assembly;

(ii) install bridging;

(iii) install joists for a cantilever-floor;

(iv) install a subfloor using butt-joint plywood or oriented strand board panels; and

(v) install a single floor system using tongue-and-groove plywood or oriented strand board panels.

(6) The student knows how to lay out and frame walls and ceilings, rough-in door and window openings, construct corners and partition tees, 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 plates, corner posts, door and window openings, partition tees, bracing, and fire-stops;

(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.

(7) 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) understand 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.

(8) 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 quantity requirements;
- (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 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.

(9) 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 other door and window hardware, including security hinges, keepers, deadbolts, and peep holes.

(10) 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.

§130.52. Advanced Construction Technology (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Principles of Architecture and Construction and Construction Technology.

(b) Introduction. In Advanced Construction Technology, students gain advanced knowledge and skills specific to those needed to enter the work force as carpenters, building maintenance technicians, or supervisors or prepare for a postsecondary degree in construction management, architecture, or engineering. Students build on the knowledge base from Construction Technology and are introduced to exterior and interior finish out skills.

(c) 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 installation of 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 systems;

(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 blocking.

(6) The student knows various types of gypsum drywall, 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, dry-wall 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 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 state the purpose and use of each type of material, including compounds, joint reinforcing tapes, trim materials, textures, and coatings;

(E) properly finish drywall using hand tools;

(F) recognize various types of problems that occur in drywall finishes;

(G) identify the causes and correct methods for solving each type of problem; 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 and demonstrate the installation procedures for placing selected door jambs and frames in different types of interior partitions;

(B) identify different 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 procedure for placing and hanging a selected 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 properly 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.

§130.53. Mill and Cabinetmaking Technology (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Architecture and Construction.

(b) Introduction. In Mill and Cabinetmaking Technology, students gain knowledge and skills specific to those needed to enter the work force in the area of mill work and cabinet manufacturing and installation. The student 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 acquire knowledge and skills in cabinet design, tool usage, jointing methods, finishes, and numerical and computer control production methods.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and preparation requirements for mill and cabinetmaking;

(B) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(C) identify employers' expectations and appropriate work habits;

(D) apply the competencies related to resources, information, systems, and technology in appropriate settings and situations; and

(E) demonstrate knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate government regulations.

(2) 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, management, and customers;

(B) successfully complete work orders and related paperwork;

(C) estimate supplies, materials, and labor costs for work orders;

(D) apply the principles of mathematics for accurate linear and metric measurements; and

(E) read and interpret appropriate blueprints, drawings, charts, and diagrams.

(3) 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.

(4) 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) safely use hand and power tools and equipment commonly employed in mill and cabinetmaking;

(B) properly handle and dispose of environmentally hazardous materials used in mill and cabinetmaking;

(C) use the proper procedures in sawing, planing, shaping, turning, boring, mortising, and sanding various types of woods;

(D) demonstrate knowledge of numerical control and computer control production devices; and

(E) demonstrate knowledge of new and emerging technologies that may affect mill and cabinetmaking.

(5) The student applies the concepts and skills of mill and cabinet making to simulated and actual work situations. The student is expected to:

(A) identify and construct the various joints used in cabinetmaking;

(B) use the proper procedures in gluing, clamping, laminating, veneering, and inlaying;

(C) use the proper procedures to construct and install cabinet doors, furniture doors, drawers, drawer guides, shelves, cabinet interiors, legs, posts, table tops, and cabinet tops;

(D) use proper finishing techniques; and

(E) apply the essential knowledge and skills in mill and cabinetmaking to career preparation learning experiences, including, but not limited to, job shadowing, mentoring, and apprenticeship training.

§130.54. Building Maintenance Technology (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Architecture and Construction.



(b) Introduction. In Building Maintenance Technology, students gain knowledge and skills specific to those 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 acquire knowledge and skills in plumbing, electrical, and Heating, Ventilation, and Air Conditioning (HVAC) systems. Additionally, students learn methods for repair and installation of drywall, roof, and insulation systems.

(c) Knowledge and skills.

(1) The student identifies various employment opportunities in the field of building maintenance. The student is expected to:

(A) identify job opportunities with their accompanying job duties such as building maintenance technician, building maintenance supervisor, architect, and engineer; and

(B) research construction careers along with the education, job skills, and experience required to achieve that career goal.

(2) The student gains knowledge to interpret various types of working drawings as they pertain to commercial construction. The student becomes familiar with all aspects of contract 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 construction 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 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) close up a valley using fiberglass shingles;

(D) explain how to make various roof projections watertight when using fiberglass shingles;

(E) lay out, cut, and install a cricket or saddle;

(F) install wood shingles and shakes on roofs;

(G) describe how to close up a valley using wood shingles and shakes;

(H) complete the cuts and install the main and hip ridge caps using wood shakes; and

(I) demonstrate the techniques for installing other selected types of roofing materials.

(4) The student selects and installs various types of insulation in walls, floors, and attics. The student 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.

(5) 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.

(6) The student gains knowledge of the types and grades of steel 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 steel frame wall or partition;

(B) identify the fastening methods used for steel frame systems; and

(C) identify methods used to secure steel frame systems to supporting structures.

(7) The student knows various types of gypsum drywall, 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.

(8) The student knows the materials, tools, and methods used to finish and patch gypsum drywall. The student is expected to:

(A) describe the differences between 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) properly 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; and

(H) patch damaged drywall.

(9) 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.

(10) 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 for a suspended ceiling;

(E) sketch the ceiling layout for a suspended ceiling; and

(F) install selected suspended ceilings.

(11) 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 properly use fasteners to install trim, including door trim, window trim, base trim, and ceiling trim.

(12) 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.

(13) 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 of 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.

§130.55. *Advanced Building Maintenance Technology (Two to Three Credits).*

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Building Maintenance Technology.

(b) Introduction. In Advanced Building Maintenance Technology, students continue to gain advanced knowledge and skills specific to those needed to enter the work force 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 acquire knowledge and skills in safety, Occupational Safety and Health Administration (OSHA) standards, safety devices in electrical circuits, maintenance of electrical and heating, ventilation, and air conditioning (HVAC) systems, and concepts of historic preservation.

(c) Knowledge and skills.

(1) The student identifies various employment opportunities in the field of building maintenance. The student is expected to:

(A) identify job opportunities with their accompanying job duties and tasks such as a building maintenance technician, manager, and construction manager; and

(B) research career pathways along with the education, job skills, and experience required to achieve that pathway.

(2) The student knows electrical safety regulations and safety guidelines. The student is expected to:

(A) demonstrate safe working procedures during building maintenance;

(B) explain the purpose of the OSHA and how to promote safety on site;

(C) identify electrical hazards and how to avoid or minimize them on site; 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.

(3) The student knows how to interpret electrical drawings, electrical symbols, schematics, one-line diagrams, and wiring diagrams. The student is expected to:

- (A) explain the basic layout of an electrical drawing;
- (B) identify the common symbols used on electrical drawings;
- (C) read equipment schedules found on electrical drawings; and
- (D) describe the type of information included in electrical specifications.

(4) 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.

(5) The student installs various types of lamps and fixtures. The student is expected to:

- (A) recognize the different kinds of lamps and explain the advantages and disadvantages of each type, including incandescent, halogen, fluorescent, and high-intensity discharge;
- (B) properly select and install lamps into lighting fixtures; and
- (C) install various lighting fixtures, including surface mounted, recessed, suspended, and track-mounted.

(6) 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, ohmmeter, volt-ohm-multimeter, wattmeter, megohmmeter, frequency meter, power factor meter, continuity tester, voltage tester, recording instruments, and cable-length meters;
- (B) explain how to read and convert from one scale to another using test equipment;
- (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.

(7) The student installs and maintains electrical devices and knows wiring techniques common to commercial and industrial facilities. The student is expected to:

- (A) describe how to determine electrical service requirements for commercial and industrial facilities;
- (B) select the proper wiring methods for various commercial 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 and purposes of equipment grounding conductors;

(F) size and select outlet boxes for 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.

(8) The student is introduced to the basic principles of HVAC systems. The student is expected to:

- (A) explain the principles of HVAC;
- (B) describe what the Clean Air Act means to the HVAC systems industry; and
- (C) identify the types of schedules and drawings used in HVAC systems and refrigeration industries.

(9) The student installs, selects, prepares, joins, and supports copper and plastic piping 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 refrigerant piping;
- (E) describe the requirements for pressure-testing a system once it has been installed;
- (F) identify types of plastic pipe and describe their uses; and
- (G) cut and join lengths of plastic pipe.

(10) The student operates, tests, and adjusts 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) 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 micro-processor-based controls; and
- (D) troubleshoot systems using various controls.

(11) 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 United States Department of Interiors 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 building codes regarding historic preservation for a local area.

§130.56. *Electrical Technology (One to Two Credits).*

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Architecture and Construction.

(b) Introduction. In Electrical Technology, students gain knowledge and skills specific to those needed to enter the work force as an electrician or building maintenance supervisor or prepare for a postsecondary degree in construction. Students acquire knowledge and skills in safety, electrical theory, tools, codes, installation of electrical equipment, and the reading of electrical drawings, schematics, and specifications.

(c) Knowledge and skills.

(1) The student identifies various employment opportunities in the field of electrical trades. The student is expected to:

(A) identify job opportunities with their accompanying job duties such as electrician, building maintenance technician, manager, and electrical engineer; and

(B) research career pathways along with the education, job skills, and experience required to achieve that pathway.

(2) The student identifies the issues associated with electrical hazards found on a job site. 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 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.

(3) 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.

(4) 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.

(5) The student learns the electrical concepts used in Ohm's law applied to direct current and series circuits. The student 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 how atoms are constructed;

(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 circuit;

(J) explain the basic characteristics of a parallel circuit;

(K) explain the basic characteristics of a series-parallel circuit;

(L) calculate, using Kirchhoff's current law, the total current in parallel and series-parallel circuits;

(M) find the total amount of resistance in a series circuit;

(N) find the total amount of resistance in a parallel circuit; and

(O) find the total amount of resistance in a series-parallel circuit.

(6) The student gains knowledge to properly select, inspect, use, and maintain common electrical test equipment. The student is expected to:

(A) explain the operation of test equipment such as ammeter, voltmeter, ohmmeter, volt-ohm-multimeter, wattmeter, megohmmeter, frequency meter, power factor meter, continuity tester, voltage tester, recording instruments, and cable-length meters;

(B) explain how to read and convert from one scale to another using the test equipment specified in subparagraph (A) of this paragraph;

(C) explain the importance of proper meter polarity;

(D) define frequency and explain the use of a frequency meter; and

(E) explain the difference between digital and analog meters.

(7) 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 the National Electrical Code;

(C) explain how to navigate the National Electrical Code;

(D) describe the purpose of the National Electrical Manufacturers Association and National Fire Protection Association; and

(E) explain the role of testing laboratories.

(8) 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 race-

ways;

(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.

(9) The student learns the types and applications of conductors and wiring techniques. The student is expected to:

(A) explain the various sizes and gauges of 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 ca-

bles;

(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 conduc-

tors 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.

(10) 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 the types of lines used on drawings;

(D) identify common symbols used on drawings;

(E) understand the use of architect's and engineer's

scales;

(F) interpret electrical drawings, including site plans,

floor plans, and detail drawings;

(G) read equipment schedules found on electrical draw-

ings; and

(H) describe the type of information included in electri-

cal specifications.

(11) 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 single-pole, double-pole, three-way, four-way, dimmer, special, and safety switches;

(B) explain National Electrical Manufacturers Association classifications as they relate to switches and enclosures;

(C) explain the National Building Code requirements concerning wiring devices;

(D) identify and state the functions and ratings of straight blade, twist lock, and pin and sleeve receptacles;

(E) identify and define receptacle terminals and discon-

nects;

(F) identify and define ground fault circuit interrupters;

(G) explain the box mounting requirements in the Na-

tional Building Code;

(H) use a wire stripper to strip insulation from a wire;

(I) use a solderless connector to splice wires together;

(J) identify and state the functions of limit switches and

relays; and

(K) identify and state the function of switchgear.

(12) 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 require-

ments 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 in-

stallation requirements;

(G) explain the types and purposes of equipment

grounding conductors;

(H) explain the purpose of ground-fault circuit inter-

rupters and tell where they must be installed;

(I) size 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.

§130.57. Advanced Electrical Technology (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Principles of Architecture and Construction and Electrical Technology.

(b) Introduction. In Advanced Electrical Technology, students gain advanced knowledge and skills specific to those needed to enter the work force as an electrician or building maintenance technician or supervisor or prepare for a postsecondary degree in construction. Students 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.

(c) Knowledge and skills.

(1) The student identifies various employment opportunities in the field of electrical trades. The student is expected to:

(A) identify job opportunities with their accompanying job duties such as electrician, building maintenance technician, manager, and electrical engineer; and

(B) research careers along with the education, job skills, and experience required to achieve that career goal.

(2) The student knows the issues associated with electrical hazards found on a job site. 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 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.

(3) The student learns characteristics of alternating-current systems and the application of Ohm's law to alternating current circuits. The student is expected to:

(A) calculate the peak and effective voltage or current values for an alternating current waveform;

(B) calculate the phase relationship between two alternating current waveforms;

(C) describe the voltage and current phase relationship in a resistive alternating current circuit;

(D) describe the voltage and current transients that occur in an inductive circuit;

(E) define inductive reactance and state how it is affected by frequency;

(F) define the voltage and current transients that occur in a capacitive circuit;

(G) define capacitive reactance and state how it is affected by frequency;

(H) explain the relationship between voltage and current in alternating current circuits such as resistor-inductor circuit, resistor-capacitor circuit, LC circuit, and RLC circuit;

(I) describe the effect that resonant frequency has on impedance and current flow in a series or parallel resonant circuit;

(J) define bandwidth and describe how it is affected by resistance in a series or parallel resonant circuit; and

(K) explain terms such as true power, apparent power, reactive power, power factor, and basic transformer action as related to alternating current circuits.

(4) 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 motor;

(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.

(5) 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.

(6) 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.

(7) 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) properly 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.

(8) 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) properly 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.

(9) 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.

(10) 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 connector 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.

(11) 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.

(12) 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.

(13) 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.

(14) 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) properly 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.

§130.58. Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Architecture and Construction or Construction Technology.

(b) Introduction. In Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology, students gain knowledge and skills specific to those needed to enter the industry as technicians in the HVAC and refrigeration industry or building maintenance technician or supervisor or prepare for a postsecondary degree. Students acquire knowledge and skills in safety, principles of HVAC theory, tools, codes, and installation of HVAC and refrigeration equipment.

(c) Knowledge and skills.

(1) The student identifies various employment opportunities in the field of HVAC and refrigeration industries. The student is expected to:

(A) identify job opportunities with their accompanying job duties in occupations such as electrician, building maintenance technician, manager, and electrical engineer; and

(B) research career pathways along with the education, job skills, and experience required to achieve that career goal.

(2) 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.

(3) The student applies the knowledge and skills in mathematics that are particular to HVAC and refrigeration. The student is expected to:

(A) identify similar units of measurement in both English and the International System (SI) of units and state which units are larger;

(B) convert measured values in the English system to equivalent SI values and vice versa;

(C) express numbers as powers of ten;

(D) determine the powers and roots of numbers;

(E) solve basic algebraic equations;

(F) identify various geometric figures;

(G) use the Pythagorean Theorem to make calculations involving right triangles;

(H) calculate perimeter, area, and volume; and

(I) convert temperature values between Celsius and Fahrenheit.

(4) The student selects, prepares, joins, and supports 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 the right tubing for a job;

(C) cut and bend copper tubing;

(D) safely join tubing by using flare and compression fittings;

(E) determine the kinds of hangers and supports needed for refrigerant piping;

(F) describe the basic requirements for pressure-testing a system once it has been installed;

(G) identify types of plastic pipe and state their uses; and

(H) cut and join lengths of plastic pipe.

(5) 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.

(6) 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) use Ohm's law to calculate the current, voltage, and resistance in a circuit;

(D) use the power formula to calculate how much power is consumed by a circuit;

(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.

(7) 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.

(8) 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) with supervision, use a manometer to measure and adjust manifold pressure on a gas furnace;

(H) identify the major components of an oil furnace and describe how each works; and

(I) with supervision, perform furnace preventive maintenance procedures such as cleaning and filter replacement.

(9) 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.

§130.59. *Advanced Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology (Two to Three Credits).*

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Principles of Architecture and Construction and Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology.

(b) Introduction. In Advanced Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology, students gain advanced knowledge and skills specific to those needed to enter the industry as HVAC and refrigeration technicians or building maintenance technicians or supervisors or prepare for a postsecondary degree. Students acquire knowledge and skills in safety, electrical theory, tools, codes, installation of commercial HVAC equipment, heat pumps, troubleshooting techniques, various duct systems, and maintenance practices.

(c) Knowledge and skills.

(1) The student learns the systems, equipment, and operating sequences used in a variety of commercial airside system configurations such as constant volume single-zone and multi-zone, variable valve timing, variable air volume, and dual-duct variable air volume. 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) successfully 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 how to analyze heat pump control circuits. The student 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.

*§130.60. Piping and Plumbing Technology (One to Two Credits).*

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Architecture and Construction or Construction Technology.

(b) Introduction. In Piping and Plumbing Technology, students gain knowledge and skills needed to enter industry as a plumber, pipe fitter, or building maintenance technician or supervisor or prepare for a postsecondary degree in construction management, architecture, or engineering. Students acquire knowledge and skills in tool usage, safety, pipefitting, drainage, building codes, and water supply.

(c) Knowledge and skills.

(1) The student identifies various employment opportunities in the fields of plumbing and pipe fitting. The student is expected to:

(A) identify job opportunities with their accompanying job duties such as plumber, pipe fitter, building maintenance technician or supervisor, manager, and mechanical engineer;

(B) research careers along with the education, job skills, and experience required to achieve that career goal; and

(C) identify the industries and associations that make up the modern plumbing and pipe fitting profession.

(2) 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 unsafe conditions that cause accidents;

(B) describe how to handle unsafe acts and unsafe 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; and

(H) describe and demonstrate the lockout and tagout process.

(3) The student selects and properly 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 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; and

(F) describe the safety requirements for using plumbing tools.

(4) The student applies mathematics concepts such as whole numbers, fractions, decimals, and squares and examines how these 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 the metric system and how it is used in the plumbing industry;

(D) square various numbers and determine the square roots of numbers, with and without a calculator;

(E) identify the parts of a fitting and use common pipe-measuring techniques;

(F) use fitting dimensions tables to determine fitting allowances and thread makeup; and

(G) calculate end-to-end measurements using fitting allowances and thread makeup.

(5) 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) 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) sketch orthographic and schematic drawings;

(F) use an architect's scale to draw lines to scale and to measure lines drawn to scale; and

(G) discuss how code requirements apply to certain drawings.

(6) The student learns the types and grades of plastic pipe and fittings used in plumbing applications, including acrylonitrile butadiene styrene, polyvinyl chloride, chlorinated polyvinyl chloride, polyethylene, crosslinked polyethylene, 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) properly measure, cut, and join plastic piping; and

(G) explain proper procedures for the handling, storage, and protection of plastic pipes.

(7) The student understands the applications of copper pipe and fittings and the types of valves that can be used on copper pipe sys-

tems and the methods for cutting, joining, and installing copper pipe. The student is expected to:

(A) identify the types of materials and schedules used with copper piping;

(B) identify the material properties, storage, and handling requirements of copper piping;

(C) identify the types of fittings and valves used with copper piping;

(D) identify the various techniques used in hanging and supporting copper piping;

(E) properly measure, ream, cut, and join copper piping; and

(F) identify the hazards and safety precautions associated with copper piping.

(8) The student measures, cuts, threads, joins, and hangs carbon steel pipe. The student becomes familiar with labeling and sizing of 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; and

(D) properly measure, cut, groove, thread, and join steel piping.

(9) The student gains knowledge and skills to connect and install flexible plastic coated 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) explain how to properly measure, cut, join, and groove corrugated stainless steel tubing; and

(E) identify the material properties, storage, and handling requirements of corrugated stainless steel tubing.

(10) The student learns the various plumbing fixtures, the materials they are comprised of, and their installation and use. The student is expected to:

(A) identify the types of materials used in the manufacture of plumbing fixtures;

(B) discuss common types of sinks, lavatories, and faucets;

(C) identify and discuss common types of bathtubs, bath-shower modules, shower stalls, and shower baths;

(D) discuss common types of toilets, urinals, and bidets;

(E) identify and describe common types of drinking fountains and water coolers; and

(F) discuss common types of garbage disposals and domestic dishwashers.

(11) The student learns the way drain, waste, and vent systems remove waste safely. The student learns how pipes, drains, traps, and vents work. The student is expected to:

(A) explain how waste moves from a fixture through the drain system to the environment;

(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; and

(E) identify significant code and health issues, violations, and consequences related to drain, waste, and vent systems.

(12) The student learns the principles of electricity, including voltage, current, resistance, power, electrical formulas, circuitry, and common plumbing-related electrical applications. The student is expected to:

(A) state and demonstrate the safety precautions that must be followed when working on electrical equipment;

(B) describe how electrical power is generated and distributed;

(C) describe how voltage, current, resistance, and power are related;

(D) use Ohm's law to calculate the current, voltage, and resistance in a circuit;

(E) use the power formula to calculate how much power is consumed by a circuit;

(F) describe the differences between series and parallel circuits;

(G) recognize and describe the purpose and operation of the various electrical components used in plumbing equipment;

(H) make voltage, current, and resistance measurements using electrical test equipment;

(I) determine the positioning of leads;

(J) test a fuse for continuity; and

(K) explain and understand electrical symbols.

(13) The student gains the knowledge and skills to locate, install, and test complete water systems, including piping, meters, water heaters, water softeners, and hose bibs. The student is expected to:

(A) develop a material takeoff from a given set of plans;

(B) use plans and fixture rough-in sheets to determine the location of fixtures and the route of the water supply piping;

(C) locate and size a water meter;

(D) locate a water heater, water softener, and hose bib;

(E) install a water distribution system using appropriate hangers;

(F) modify structural members, using the appropriate tools, without weakening the structure;

(G) correctly size and install a water service line, including backflow prevention; and

(H) test a water supply system.

(14) The student gains the knowledge and skills for the safe handling and installation of natural gas, liquefied petroleum gas, and fuel oil systems. The student is expected to:

(A) identify the major components of the fuel systems of natural gas, liquefied petroleum gas, and fuel oil and describe the functions of each component;

(B) identify the safety precautions and potential hazards associated with each type of fuel and system, including natural gas, liquefied petroleum gas, and fuel oil;

(C) connect appliances to a fuel gas system properly;

(D) apply local codes to various fuel gas systems;

(E) design, size, purge, and test fuel gas systems; and

(F) demonstrate familiarity with applicable fuel gas codes.

*§130.61. Advanced Piping and Plumbing Technology (Two to Three Credits).*

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Principles of Architecture and Construction and Piping and Plumbing Technology.

(b) Introduction. In Advanced Piping and Plumbing Technology, students gain advanced knowledge and skills specific to those needed to enter the industry as a plumber, pipe fitter, or building maintenance technician or supervisor or prepare for a postsecondary degree in mechanical engineering. Students acquire knowledge and skills in industrial pipe fitting, motorized equipment, oxy-fuel cutting, and water, chemical, steam, compressed air, and oil pipe systems.

(c) Knowledge and skills.

(1) The student understands the selection, use, and maintenance of hand and power tools used by the pipe fitting industry. The student becomes familiar with tools, including pipe wrenches, pipe stands, pipe vises, levels, pipe fabrication tools, and pipe fitting tools. The student is expected to:

(A) describe the safety requirements that apply to the use of pipefitter hand and power tools;

(B) explain how to properly care for selected pipefitter hand and power tools;

(C) demonstrate how to safely and properly use selected pipefitter hand tools;

(D) identify tools and state their uses;

(E) use selected hand tools;

(F) cut pipe using a portable band saw;

(G) identify and explain the uses of portable grinders;

(H) explain the proper and safe operations of machines used in pipe joint preparations, including pipe threaders, portable power drives, and pipe bevellers; and

(I) perform selected pipe and joint preparation operations using power tools.

(2) The student gains the knowledge and skills for the safe use of oxyfuel cutting equipment. The student learns techniques for cutting straight lines, piecing, beveling, washing, and gouging materials. The student is expected to:

- equipment:
- (A) identify and explain the use of oxyfuel cutting
  - (B) set up oxyfuel equipment;
  - (C) light and adjust an oxyfuel torch;
  - (D) shut down oxyfuel cutting equipment;
  - (E) disassemble oxyfuel equipment;
  - (F) change empty cylinders;
  - (G) perform oxyfuel cutting;
  - (H) perform straight line and square shape procedures;
  - (I) perform piercing and slot cutting operations;
  - (J) conduct bevel operations; and
  - (K) perform washing procedures.
- (3) The student identifies the safety, operation, and maintenance of motorized equipment such as electrical generators, air compressors, aerial lifts, pumps, forklifts, and hydraulic cranes. The student is expected to:
- (A) state the safety precautions associated with the use of motor-driven equipment used on job sites;
  - (B) identify and explain the operation and uses of equipment, including welding machines, portable generators, air compressors, portable pumps, aerial lifts, compaction equipment, forklifts, trenching equipment, and backhoes; and
  - (C) perform pre-start checks and operate equipment, including portable generators, welding machines, portable pumps, and air compressors.
- (4) The student learns chemical, compressed air, fuel oil, steam, and water systems and the methods of identifying piping systems according to color codes. The student is expected to:
- (A) identify and explain the types of piping systems;
  - (B) explain the effects and corrective measures for thermal expansion in piping systems; and
  - (C) explain types and applications of pipe insulation.
- (5) The student learns plot plans, structural design, shop drawings, elevation drawings, as-built drawings, equipment arrangement drawings, pipe and instrumentation drawings, isometric drawings, spool sheets, 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.
- (6) 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.
- (7) The student uses algebra to solve problems encountered in the plumbing and pipe fitting industry. The student is expected to:
- (A) calculate area, volume, and circumference; and
  - (B) solve for right triangles using the Pythagorean Theorem.
- §130.62. *Practicum in Construction Management (Two to Three Credits).*
- (a) General requirements. This course is recommended for students in Grade 12. Prerequisite: Completion of a coherent sequence in a program area related to the field of Construction Management. Instruction may be delivered through laboratory training or through career preparation delivery arrangements.
- (b) Introduction. 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.
- (c) 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;
  - (B) determine and acquire the resources needed to complete a project; and
  - (C) develop a timeline to complete a project.
- (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 follow 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 communication, mathematics, and science knowledge and skills to construction management activities. The student is expected to:

(A) write technical reports;

(B) deliver technical presentations to groups of individuals;

(C) identify and describe the mathematics concepts used in projects; and

(D) identify and describe 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) deliver a project, product, or service and assess the customer's 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) use an accepted design process to design an object or a service;

(B) develop drawings, illustrations, or models; and

(C) establish design criteria and constraints.

(10) The student predicts the impacts of emerging and innovative applications of construction technology. The student is expected to:

(A) describe the emerging and innovative technologies being developed in a field; and

(B) identify the factors that may influence the adoption of emerging and innovative 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 specific products and services; 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) use a variety of tools, equipment, machines, materials, and processes to build products in a more efficient manner; 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) handle and store 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 it relates to construction management. The student is expected to:

(A) develop a school-based learning activity in collaboration with the teacher and at least one related industrial mentor that provides an in-depth study of at least one aspect of construction management independent study;

(B) present the project in at least two formats such as model, graphic, verbal, written, or other to a panel of students, teachers, and practitioners in construction management; and

(C) deliver the project's final product(s) that demonstrate(s) the use of a variety of resources, technologies, and communications skills.

(17) The student exhibits employability skills that lead to job success in construction management. 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; and

(G) exhibit productive work habits and attitudes.

(18) 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 and promote lifelong learning.

(19) 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;

(C) analyze legal aspects of construction management;

(D) describe and use the scientific method, technological method, or universal systems model to conduct a research activity; and

(E) identify the inputs, processes, outputs, and feedback associated with research, design, and development activities.

(20) 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 between research, design, and development; and

(D) distinguish between adaptation, imitation, innovation, and invention.

(21) 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 areas where 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.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

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For further information, please call: (512) 475-1497



## SUBCHAPTER C. ARTS, AUDIO/VIDEO TECHNOLOGY, AND COMMUNICATIONS

### 19 TAC §§130.81 - 130.99

The State Board of Education (SBOE) proposes new §§130.81-130.99, concerning the Texas essential knowledge and skills (TEKS) for arts, audio/video technology, and communications. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to

by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.81. Implementation of Texas Essential Knowledge and Skills for Arts, Audio/Video Technology, and Communications.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.82. Principles of Arts, Audio/Video Technology, and Communications (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grade 9.

(b) Introduction. Careers in the Arts, Audio/Video Technology, and Communications career cluster require, in addition to 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.

(c) Knowledge and skills.

(1) The student applies English language arts in Arts, Audio/Video Technology, and Communications cluster 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 for audience, purpose, situation, and intent such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) give 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information technology applications when completing Arts, Audio/Video Technology, and Communications cluster projects. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications.

(5) The student understands Arts, Audio/Video Technology, and Communications cluster systems. The student is expected to:

(A) describe the nature and types of businesses in this cluster;

(B) analyze and summarize the history and evolution of the various related fields of study in this cluster;

(C) analyze the cluster's economic base; and

(D) analyze and summarize evidence of interdependence between the technical and the artistic sides of this career cluster.

(6) The student applies safety regulations. The student is expected to implement personal and classroom safety rules and regulations.

(7) The student develops leadership characteristics. The student is expected to 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 the Arts, Audio/Video Technology, and Communications cluster. The student is expected to:

(A) exhibit ethical conduct related to interacting with others such as client confidentiality, privacy of sensitive content, and providing proper credit for ideas;

(B) examine the First Amendment, Federal Communications Commission regulations, the Freedom of Information Act, liability laws, and other regulations for compliance issues relevant to this cluster;

(C) examine the liabilities, copyright laws, fair use, and duplication of materials associated with productions and performances; and

(D) analyze the impact of Arts, Audio/Video Technology, and Communications cluster industries on society.

(9) The student develops employability characteristics. The student is expected to:

(A) identify training, education, or certification requirements needed for employment;

(B) identify and demonstrate positive work behaviors and personal qualities needed to be employable such as self-discipline, self-worth, positive attitude, integrity, and commitment;

(C) create a career portfolio to document work samples; and

(D) 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 a basic understanding of the Arts, Audio/Video Technology, and Communications cluster. 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 cluster career fields and defining and using related terminology;

(D) evaluate works of art using critical-thinking skills;

(E) demonstrate knowledge of various communication processes in professional and social contexts by:

(i) explaining the importance of effective communication skills in professional and social contexts;

(ii) identifying the components of the communication process and their functions;

(iii) identifying standards for making appropriate communication choices for self, listener, occasion, and task;

(iv) identifying the characteristics of oral language and analyzing standards for using informal, standard, and technical language appropriately;

(v) identifying types of nonverbal communication and their effects;

(vi) recognizing the importance of effective nonverbal strategies such as a firm handshake, direct eye contact, and appropriate use of space and distance;

(vii) identifying the components of the listening process;

(viii) identifying specific kinds of listening such as critical, deliberative, and empathic;

(ix) recognizing the importance of gathering and using accurate and complete information as a basis for making communication decisions;

(x) identifying and analyzing ethical and social responsibilities of communicators; and

(xi) recognizing and analyzing appropriate channels of communication in organizations;

(F) use appropriate interpersonal communication strategies in professional and social contexts by:

(i) identifying types, importance, and purposes of professional and social relationships;

(ii) employing appropriate verbal, nonverbal, and listening skills to enhance interpersonal relationships;

(iii) using communication management skills to build confidence and develop appropriate assertiveness, tact, and courtesy;

(iv) using professional etiquette and protocol in situations such as making introductions, speaking on the telephone, and offering and receiving criticism;

(v) making clear appropriate requests, giving clear and accurate directions, asking appropriate and purposeful questions, and responding appropriately to the requests, directions, and questions of others;

- (vi) participating appropriately in conversations;
- (vii) communicating effectively in interviews;
- (viii) identifying and using appropriate strategies for dealing with differences, including gender, ethnicity, and age; and
- (ix) analyzing and evaluating the effectiveness of communication;

(G) communicate effectively in groups in professional and social contexts by:

(i) identifying kinds of groups and the importance and purposes they serve;

(ii) analyzing group dynamics and processes for participating effectively in groups, committees, or teams;

(iii) identifying and analyzing the roles of group members and their influence on group dynamics;

(iv) demonstrating skills for assuming productive roles in groups;

(v) using appropriate verbal, nonverbal, and listening strategies to promote group effectiveness;

(vi) identifying and analyzing leadership styles;

(vii) using effective communication strategies in leadership roles;

(viii) using effective communication strategies for solving problems, managing conflicts, and building consensus in groups; and

(ix) analyzing the participation and contributions of group members and evaluating group effectiveness; and

(H) make and evaluate formal and informal professional presentations by:

(i) analyzing the audience, occasion, and purpose when designing presentations;

(ii) determining specific topics and purposes for presentations;

(iii) researching topics using primary and secondary sources, including electronic technology;

(iv) using effective strategies to organize and outline presentations;

(v) using information effectively to support and clarify points in presentations;

(vi) preparing scripts or notes for presentations;

(vii) preparing and using visual or auditory aids, including technology, to enhance presentations;

(viii) using appropriate techniques to manage communication apprehension, build self-confidence, and gain command of the information;

(ix) using effective verbal and nonverbal strategies in presentations;

(x) preparing, organizing, and participating in an informative or persuasive group discussion for an audience;

(xi) making individual presentations to inform, persuade, or motivate an audience;

(xii) participating in question and answer sessions following presentations;

(xiii) applying critical-listening strategies to evaluate presentations; and

(xiv) evaluating effectiveness of presentations.

§130.83. Animation (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Graphic Design and Illustration or Art I.

(b) Introduction. 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/Video Technology, and Communications career cluster, students will be expected to develop an understanding of the history and techniques of the animation industry.

(c) 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 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; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; 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;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for animation projects.

(5) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) employ emergency procedures.

(6) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

- (A) demonstrate leadership skills;
- (B) demonstrate teamwork and conflict-management skills;
- (C) conduct and participate in meetings; and
- (D) 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 client confidentiality, 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 animation industry on society, including concepts related to persuasiveness, marketing, and point of view.

(8) The student develops employability characteristics. 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 work experiences, licenses, certifications, and work samples;
- (E) demonstrate skills in evaluating and comparing employment opportunities; and
- (F) 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 understanding of animation. The student is expected to:

- (A) demonstrate appropriate use of hardware components;
- (B) demonstrate appropriate use of software programs;
- (C) demonstrate appropriate use of storage devices;
- (D) demonstrate knowledge of sound editing;
- (E) demonstrate knowledge of file formats and cross-platform compatibility;
- (F) acquire information in a variety of electronic formats;
- (G) evaluate visual information by:

(i) recognizing the use of principles and elements of design; and

(ii) recognizing the use of typography;

(H) use an appropriate design process to create and modify solutions to problems by:

(i) combining graphics, images, and sound;

(ii) applying principles of design;

(iii) developing and referencing technical documentation; and

(iv) editing products;

(I) publish and deliver the product in a variety of media;

(J) research the history and evolution of animation by:

(i) explaining the history of animation;

(ii) describing how changing technology is affecting the industry;

(iii) analyzing the use of symbols in the animation of diverse cultures;

(iv) comparing current animation technologies with historical technologies;

(v) comparing various styles of animation; and

(vi) exploring emerging and innovative animation technologies and software;

(K) understand and apply animation principles, elements, and techniques by:

(i) describing and using audience identification, script writing, character design, storyboarding, audio uses, and delivery formats;

(ii) describing and using cell, stop motion, inbetweening/tweening, motion paths, masking, looping, scripting/programming, and interactivity;

(iii) describing lighting and camera shots;

(iv) describing and using flip books, claymation, and cut-outs;

(v) rendering; and

(vi) describing and using postproduction processes such as editing, titles, credits, and special effects;

(L) evaluate a product using critical-thinking skills;

(M) present oral or written evaluations of animation projects by:

(i) identifying the intended audience;

(ii) describing aesthetics;

(iii) explaining the storyline;

(iv) summarizing subject matter; and

(v) discussing the use of sound; and

(N) create animation projects using a variety of techniques and software programs.

§130.84. Advanced Animation (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Animation.

(b) Introduction. 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/Video 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.

(c) 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 and skills by demonstrating use of content, technical concepts, and vocabulary using correct grammar, punctuation, and terminology to write and edit documents; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; 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 such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database 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 safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) employ 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) conduct and participate in meetings to accomplish work tasks by developing meeting goals, objectives, and agendas; preparing for and conducting meetings to achieve objectives within scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedure, as needed, to conduct meetings; 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 develops employability characteristics. 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 resumé and letter of application, completing a job application, and demonstrating effective interview skills; and

(D) maintain a career portfolio to document work experiences, licenses, certifications, and work samples.

(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 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;

(D) demonstrate familiarity with commercial production applications;

(E) demonstrate animation principles and elements by:

(i) applying animation principles such as arcs, timing, and exaggeration; and

(ii) identifying animation elements such as cycles, layers, transitions, and transparency;

(F) apply the elements and principles of art to animation projects by:

(i) identifying animation design elements such as line, color, shape, and texture;

(ii) explaining the use of additive color theory; and

(iii) comparing various styles of animation;

(G) apply pre-production processes by:

(i) analyzing target audience to identify needs and wants;

(ii) writing and editing scripts;

(iii) storyboarding; and

(iv) selecting aspect ratio and frame rate appropriate to delivery method;

(H) apply production processes by:

(i) designing color and compositional elements;

(ii) designing characters, environments, and props;

(iii) modeling characters, environments, and props;

(iv) lighting sets or animating lights as needed;

(v) developing rigs for animating characters;

(vi) assembling particle systems for visual effects such as rain, snow, and fire;

(vii) animating characters, environments, or cameras;

(viii) recording musical scores; and

(ix) rendering scenes; and

(I) apply post-production processes by:

(i) editing;

(ii) producing titles and credits;

(iii) adding visual effects and processing;

(iv) adding audio effects and processing; and

(v) producing output.

§130.85. Audio/Video Production (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Arts, Audio/Video Technology, and Communications.

(b) Introduction. 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/Video 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 activities.

(c) 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 such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for audio/video production projects.

(5) The student understands design systems. The student is expected to analyze and summarize the history and evolution of the audio and video production fields.

(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 with electrical circuits.

(7) The student develops leadership characteristics. 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 complies with laws regarding use of technology in audio and video production. The student is expected to:

(A) exhibit 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;

(C) model respect of intellectual property; and

(D) analyze the ethical impact of the audio and video production industry on society.

(9) The student develops employability characteristics. The student is expected to:



(A) identify and participate in training, education, or certification required 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) develop a resumé and letter of application;

(E) create a career portfolio to document work experiences, licenses, certifications, and work samples;

(F) demonstrate skills in evaluating and comparing employment opportunities; and

(G) 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 audio and video production. The student is expected to:

(A) understand the industry, including history, current practice, and future trends by:

(i) explaining the beginnings and evolution of audio, video, and film;

(ii) describing how the changing technology is impacting the audio, video, and film industries; and

(iii) defining terminology associated with the industry;

(B) employ knowledge regarding use of audio by:

(i) identifying the key elements required in audio scripts;

(ii) applying writing skills to develop an audio script;

(iii) explaining how various styles of music can create a specific emotional impact;

(iv) identifying various audio tape, tapeless, and file formats;

(v) understanding various microphones based upon type and pickup patterns; and

(vi) understanding various audio cables and connectors;

(C) employ knowledge regarding use of video by:

(i) identifying the key elements required in video scripts;

(ii) applying writing skills to develop a video script;

(iii) identifying various video tape, tapeless, and file formats;

(iv) understanding various video cables and connectors;

(v) distinguishing between analog and digital formats;

(vi) demonstrating operation of video cameras; and

(vii) demonstrating how to properly maintain video equipment;

(D) demonstrate various cinematography techniques by:

(i) demonstrating how to frame and maintain picture composition;

(ii) demonstrating focusing techniques;

(iii) demonstrating camera and tripod movements; and

(iv) demonstrating proper exposure and white balance; and

(E) edit basic audio and video productions by:

(i) understanding the differences in linear and non-linear systems;

(ii) demonstrating skills required for editing using linear and nonlinear systems;

(iii) employing knowledge of control peripherals for capturing or ingesting media; and

(iv) describing various digital platforms, including high definition and standard definition.

(12) The student understands the pre-production process. The student is expected to:

(A) identify critical elements in the pre-production stage;

(B) use technology applications to facilitate pre-production by:

(i) designing and implementing procedures to track trends, set timelines, and evaluate progress for continual improvement in process and product;

(ii) responding to advice from peers and professionals;

(iii) creating technology specifications;

(iv) monitoring process and product quality using established criteria;

(v) creating a script and identifying resources needed to begin the production; and

(vi) identifying budgeting considerations for crew, cast, and equipment;

(C) analyze the script and storyboard development processes for a successful production;

(D) identify and participate in the team roles required for completion of a production;

(E) identify equipment, crew, and cast requirements for a scripted production; and

(F) understand the casting or audition process.

(13) The student understands the production process. The student is expected to:

(A) understand the coherent sequence of events to successfully produce a script;

(B) use lighting techniques by:

(i) demonstrating three-point lighting, including key, fill, and back lights;

(ii) using reflected light;

(iii) understanding color temperatures; and

(iv) using filters;

(C) understand audio techniques, including microphone variances and sound mixing; and

(D) demonstrate knowledge of interpersonal skills with sensitivity to diversity when directing crew or talent.

(14) The student understands the post-production process. The student is expected to:

(A) demonstrate appropriate use of hardware components, software programs, and their connections by:

(i) demonstrating knowledge of video systems such as digital and analog systems, software applications, and communication and networking components;

(ii) using various computer peripherals appropriately;

(iii) making appropriate decisions regarding the selection of software; and

(iv) making necessary adjustments regarding compatibility issues, including digital file formats and cross-platform connectivity;

(B) apply animation effects to video by:

(i) using character generators, fonts, colors, and principles of compositions to create graphic images; and

(ii) creating captions or titles for video and graphics;

(C) demonstrate proficiency in the use of a variety of electronic input devices;

(D) use a variety of strategies to acquire information from online resources;

(E) acquire electronic information in a variety of formats;

(F) use different compression techniques to output for distribution;

(G) format digital information for effective communication with a defined audience by:

(i) using appropriate font attributes and color;

(ii) using appropriate white space and graphics;

(iii) using appropriate camera perspective;

(iv) using appropriate content selection and presentation; and

(v) understanding target audiences and demographics;

(H) deliver the product in a variety of media by:

(i) understanding the various delivery formats such as disk, broadcast, cellular, portable device, electronic, and online delivery;

(ii) researching to determine appropriate delivery method based on distribution needs; and

(iii) extending the learning environment through digital sharing;

(I) use appropriate computer-based productivity tools to create and modify solutions to problems by:

(i) integrating productivity tools;

(ii) creating audio and video technology products for a variety of purposes and audiences;

(iii) developing technical documentation related to audio and video technology; and

(iv) critiquing a production; and

(J) use technology applications to facilitate evaluation of work, both process and product by:

(i) evaluating the project's success in meeting established criteria; and

(ii) researching the best method for promoting the product.

§130.86. Advanced Audio/Video Production (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Audio/Video Production.

(b) Introduction. 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 advanced knowledge and skills needed for success in the Arts, Audio/Video 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 activities. This course may be implemented in an advanced audio format or an advanced format, including both audio and video.

(c) 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 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 applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for audio and video production projects.

(5) The student applies knowledge of design systems. The student is expected to analyze and summarize the history and evolution of the audio/video production field.

(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) conduct and participate in meetings to accomplish work tasks by developing meeting goals, objectives, and agendas; preparing for and conducting meetings to achieve objectives within scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedure, as needed, to conduct meetings; 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 audio/video production. 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 develops employability characteristics. 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;

(D) update a career portfolio to document work experiences, licenses, certifications, and work samples; and

(E) 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 demonstrates an understanding of audio/video production equipment. The student is expected to:

(A) understand standard systems for the audio/video industry by:

(i) setting up editing systems and performing standard trouble-shooting;

(ii) understanding knowledge of wireless and wired transmission systems;

(iii) identifying appropriate cabling and configurations for engineering purposes;

(iv) setting up cabling for various productions; and

(v) routing standard cabling for broadcasting signal;

(B) employ knowledge regarding use of recording equipment by:

(i) explaining uses of analog and digital formats;

(ii) describing tape and tapeless formats;

(iii) demonstrating the operation of recording devices;

(iv) demonstrating how to properly maintain recording equipment; and

(v) demonstrating how to properly meter a recording signal for proper levels; and

(C) demonstrate appropriate usage of industry-related terminology.

(12) The student understands the pre-production process. The student is expected to:

(A) apply critical elements in the pre-production stage;

(B) use advanced technology applications to facilitate pre-production by:

(i) demonstrating procedures to establish timelines; and

(ii) developing a budget with considerations for crew, cast, and equipment;

(C) write production scripts for various types of programs by:

(i) using proper formatting for the specific type of script;

(ii) identifying specific elements of the script needed for successful production, including cast, props, or sound effects; and

(iii) discussing how various styles of music can create a specific emotional impact;

(D) determine equipment, crew, and cast requirements for a successful production by:

(i) examining the end goal of the production to determine the appropriate format for recording and distribution;

restraints;

(ii) identifying several means to work within budget

(iii) conducting auditions for the talent; and

(iv) securing the crew required for a successful production; and

by:

(E) examine various contracts related to industry tasks

(i) using talent releases for productions;

(ii) examining key elements for talent work contracts;

(iii) examining key elements for crew contracts; and

(iv) examining key elements in distribution contracts.

(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) demonstrate a knowledge of audio techniques by:

(i) identifying various microphone types;

(ii) understanding the various microphone pickup patterns;

and

(iii) demonstrating understanding of sound mixing;

(iv) demonstrating understanding of a final audio mix;

(C) execute production of the script by:

(i) demonstrating teamwork and knowledge of interpersonal skills with sensitivity to diversity when directing crew and talent; and

(ii) applying knowledge of the critical elements in designing activities in the production stage;

(D) employ knowledge of digital editing by:

(i) addressing various distribution formats, including electronic, disk, tapeless, and tape; and

(ii) capturing media to an editing system for the purpose of manipulating recorded media; and

(E) employ knowledge of recording equipment by:

(i) using proper monitoring of equipment to ensure quality recordings;

(ii) setting appropriate levels before recording using broadcast standard tools; and

(iii) identifying standards for logging notes or comments in the original recording process.

(14) The student understands the post-production process. The student is expected to:

(A) apply knowledge and appropriate use of hardware components, software programs, and their connections by:

(i) demonstrating knowledge and appropriate use of digital systems such as software applications, communication, and networking components;

(ii) demonstrating an understanding of various input, processing, output, and storage devices;

(iii) demonstrating an understanding of compatibility issues, including digital file formats and cross-platform connectivity; and

(iv) demonstrating an understanding of high definition and standard definition output media;

(B) acquire electronic information in a variety of formats;

(C) use various compression formats by:

(i) demonstrating knowledge of outputting for distribution; and

(ii) understanding the relationship between file size and quality;

(D) deliver the product in a variety of media by:

(i) understanding the various delivery formats such as disk, broadcast, cellular, portable devices, electronic, and online delivery; and

(ii) researching to determine the appropriate delivery method based upon distribution need; and

(E) use appropriate computer-based productivity tools to create and modify solutions to problems by:

(i) integrating productivity tools to develop and modify solutions to problems;

(ii) developing technical documentation related to project specifications; and

(iii) critiquing a production to determine how the various elements resulted in a successful or unsuccessful presentation.

(15) The student understands the business aspects of the industry. The student is expected to:

(A) understand the roles of various industry professionals by:

(i) discussing the responsibilities of producers;

(ii) discussing the responsibilities of directors, including the relationship to the production team and the responsibilities of crew members;

(iii) discussing the duties of editors;

(iv) discussing the responsibilities of engineers;

(v) discussing the responsibilities of the talent; and

(vi) discussing the responsibilities of the sales team;

(B) understand the opportunities in the industry for freelance contractors by:

(i) identifying standard freelance self-promotion techniques;

(ii) understanding how to create invoices;

(iii) understanding standard billing practices for freelance labor;

(iv) researching rates and best practices for various freelance job responsibilities; and

(v) identifying information technology applications common for small businesses;

(C) understand the unique characteristics of live productions by:

(i) identifying roles specific to live productions;

(ii) identifying the importance of time accountability;

(iii) demonstrating an understanding of back-timing and time-based mathematics;

(iv) demonstrating an understanding of Federal Communications Commission guidelines for broadcast appropriateness;

(v) identifying equipment standard for live productions; and

(vi) identifying strategies for financially supporting live productions;

(D) understand the unique characteristics of studio productions by:

(i) identifying roles unique to studio productions;

(ii) identifying costs specific to studio productions;

(iii) identifying equipment standard for studio productions; and

(iv) identifying strategies for financially supporting studio productions; and

(E) understand the unique characteristics of field production by:

(i) identifying roles unique to field productions;

(ii) identifying costs specific to field productions;

(iii) identifying equipment standard for field productions; and

(iv) identifying strategies for financially supporting field productions.

(16) The student understands the broadcast standards established by the Federal Communications Commission. The student is expected to:

(A) apply knowledge of broadcast formats by:

(i) distinguishing between analog and digital formats;

(ii) describing the difference in data signals and equipment for analog and digital technology;

(iii) identifying the evolution of the broadcast signal; and

(iv) identifying various broadcast standards, including National Television System Committee, Phase Alternating Line, and Sequential Color with Memory;

(B) identify radio and television frequencies location in the electromagnetic spectrum; and

(C) differentiate among various media by:

(i) identifying the evolution of various tape formats;

(ii) identifying the evolution of various tapeless formats;

(iii) identifying the evolution of various electronic formats;

(iv) identifying the evolution of various online delivery systems; and

(v) identifying the various film formats.

§130.87. Practicum in Audio/Video Production (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Advanced Audio/Video Production or Advanced Animation.

(b) Introduction. 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 advanced technical knowledge and skills needed for success in the Arts, Audio/Video 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 activities in a studio environment. This course may be implemented in an advanced audio, video, or animation format. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

(c) 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 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 implements advanced professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills, including data gathering and interpretation independently and in teams to solve problems and make decisions.

(4) The student implements advanced information technology applications. The student is expected to use personal information

management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for audio and video projects.

(5) The student implements advanced knowledge of design systems. The student is expected to analyze and summarize the history and evolution of the audio and video production field.

(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 implements 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) conduct and participate in meetings to accomplish work tasks by developing meeting goals, objectives, and agendas; preparing for and conducting meetings to achieve objectives within scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedure, as needed, to conduct meetings; and

(E) 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 and use of digital information by citing sources using established methods;

(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 the impact of the audio/video production industry on society, including concepts related to persuasiveness, marketing, and point of view.

(9) The student demonstrates appropriate employability characteristics and maintains a professional portfolio. The student is expected to:

(A) identify and participate in training, education, or certification to prepare for employment;

(B) identify and demonstrate positive work behaviors and personal qualities needed to be employable such as self-discipline, self-worth, positive attitude, integrity, and commitment;

(C) demonstrate skills related to seeking and applying for employment to find and obtain a desired job, including identifying job opportunities, developing a resumé and letter of application, completing a job application, and demonstrating effective interview skills;

(D) maintain a career portfolio to document work experiences, licenses, certifications, and work samples;

(E) demonstrate skills in evaluating and comparing employment opportunities; and

(F) examine employment opportunities in entrepreneurship.

(10) The student employs effective planning and time-management skills. The student is expected to employ planning and time-management skills and tools to enhance results and complete work tasks.

(11) The student implements an advanced understanding of a client-based production. The student is expected to:

(A) determine client needs by:

(i) conducting client meetings to identify specific project requirements; and

(ii) researching target audience and demographics to meet client needs;

(B) develop a production proposal for client approval by:

(i) creating a production schedule;

(ii) researching and determining production costs; and

(iii) researching and determining appropriate delivery and distribution options;

(C) engage in pre-production activities for successful execution of the project by:

(i) identifying equipment, crew, and cast requirements;

(ii) developing a budget with considerations for crew, cast, and equipment;

(iii) analyzing the script and storyboard processes; and

(iv) assigning team roles required for production;

(D) conduct a client meeting for presenting production strategies and implement client feedback;

(E) apply advanced principles of production by:

(i) implementing a coherent sequence of events;

(ii) using necessary equipment and crew for quality productions; and

(iii) demonstrating teamwork and knowledge of interpersonal skills with sensitivity to diversity;

(F) implement advanced skills in the post-production process by:

(i) demonstrating appropriate use of editing systems;

(ii) making decisions appropriate for each element of production;

(iii) making necessary adjustments regarding compatibility issues, including digital file formats and cross-platform connectivity;

(iv) using various compression formats; and

(v) demonstrating knowledge in outputting for distribution; and

(G) deliver the product by:

(i) researching the appropriate delivery formats for the target audience;

(ii) advising clients on optimal delivery options; and

(iii) discussing distribution options with optimal project reach.

(12) The student practices business skills for freelance contractors. The student is expected to:

(A) implement standard freelance self-promotion techniques;

(B) develop invoices and standard billing practices;

(C) research small-business start up practices; and

(D) use information technology applications common to small businesses.

§130.88. Graphic Design and Illustration (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Arts, Audio/Video Technology, and Communications.

(b) Introduction. 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/Video 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.

(c) 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 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 brochures, programs, posters, flyers, and magazine covers; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; and applying measurement to solve a problem.

(2) The student understands professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database 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 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;

(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 client confidentiality, 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, including concepts related to persuasiveness, marketing, and point of view.

(9) The student develops employability characteristics. 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 work experiences, licenses, certifications, and work samples; and

(E) 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 an increasing understanding of graphic design and illustration. The student is expected to:

(A) research art and design career opportunities and qualifications;

(B) research the history and evolution of art and design by:

(i) explaining the history of visual arts and design;

(ii) understanding general characteristics in artwork from a variety of cultures; and

(iii) comparing current visual arts technologies with historical technologies;

(C) interpret, evaluate, and justify design decisions;

(D) conduct oral or written critiques of designs by:

(i) applying a critical method of evaluation;

(ii) communicating an oral or written defense; and

(iii) evaluating oral or written feedback;

(E) analyze and apply art elements and principles;

(F) employ a creative design process to create original two- or three-dimensional projects by:

(i) creating designs for defined applications;

(ii) applying elements of design;

(iii) applying design principles and typography;

(iv) using good composition;

(v) demonstrating anatomical figure drawing;

(vi) demonstrating drawing in one-point, two-point, and multi-point perspective;

(vii) creating a project by applying color; and

(viii) applying printing concepts;

(G) apply art elements and principles to photographic works; and

(H) apply art elements and principles to multimedia applications.

§130.89. *Advanced Graphic Design and Illustration (Two to Three Credits).*

(a) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Graphic Design and Illustration.

(b) Introduction. 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/Video 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.

(c) 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 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 brochures, programs, posters, flyers, and magazine covers; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; and applying measurement 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 such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for art and graphic design projects.

(5) The student applies knowledge of design systems. The student is expected to analyze and summarize the history and evolution of related fields.

(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;

(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 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.

(9) The student applies employability characteristics. 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 resumé and letter of application, completing a job application, and demonstrating effective interview skills;

(D) maintain a career portfolio to document work experiences, licenses, certifications, and work samples; and

(E) 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 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:

(i) applying a critical method of evaluation; and

(ii) communicating an oral or written defense;

(C) apply art elements and principles to designs and illustrations; and

(D) employ a creative design process to create original two- or three-dimensional projects by:

(i) creating designs for defined applications;

(ii) applying elements of design;

(iii) applying design principles and typography;

(iv) using appropriate composition;

(v) using anatomically appropriate figure drawing;

(vi) using appropriate perspective;

(vii) using the most effective color choices in projects; and

(viii) using printing concepts.

§130.90. Practicum in Graphic Design and Illustration (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Advanced Graphic Design and Illustration, Advanced Commercial Photography, or Advanced Animation.

(b) Introduction. 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/Video 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.

(c) 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 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 brochures, programs, posters, flyers, and magazine covers; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; and applying measurement to solve a problem.

(2) The student implements advanced professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills, including data gathering and interpretation independently and in teams to solve problems and make decisions.

(4) The student implements advanced information technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database 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 safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) follow emergency procedures.

(7) The student implements 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) conduct and participate in meetings to accomplish work tasks by developing meeting goals, objectives, and agendas; preparing for and conducting meetings to achieve objectives within scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedure, as needed, to conduct meetings; 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. The student is expected to:

(A) exhibit ethical conduct related to interacting with others such as client confidentiality, 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 by citing sources using established methods;

(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 the impact of the advertising and visual communication design industry on society, including concepts related to persuasiveness, marketing, and point of view.

(9) The student demonstrates appropriate employability characteristics and maintains a professional portfolio. The student is expected to:

(A) identify and participate in training, education, or preparation for certification to prepare for employment;

(B) identify and demonstrate positive work behaviors and personal qualities needed to be employable such as self-discipline, self-worth, positive attitude, integrity, and commitment;

(C) demonstrate skills related to seeking and applying for employment to find and obtain a desired job, including identifying job opportunities, developing a resumé and letter of application, completing a job application, and demonstrating effective interview skills;

(D) maintain a career portfolio to document work experiences, licenses, certifications, and work samples;

(E) demonstrate skills in evaluating and comparing employment opportunities; and

(F) examine employment opportunities in entrepreneurship.

(10) The student applies effective planning and time-management skills. The student is expected to employ tools to enhance results and complete work tasks.

(11) 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;

(C) apply art elements and principles to designs and illustrations; and

(D) employ a creative design process to create professional quality two- or three-dimensional projects by:

(i) creating designs for defined applications;

(ii) using appropriate elements of design;

(iii) using appropriate design principles and typography;

(iv) using appropriate composition;

(v) using anatomically appropriate figure drawing;

(vi) using appropriate perspective;

(vii) using the most effective color choices in projects; and

(viii) using appropriate printing concepts.

§130.91. Commercial Photography (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Graphic Design and Illustration or Art I.

(b) Introduction. 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. Within this context, in addition to developing knowledge and skills needed for success in the Arts, Audio/Video 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.

(c) 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 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 brochures; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals and fractions applied to measurement, percentages, depth of field, aperture, resolution, and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; and applying measurement 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 such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) give 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information 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; 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;

(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) exhibit ethical conduct related to interacting with others such as client confidentiality, 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) analyze the impact of photography on society, including concepts related to persuasiveness, marketing, and point of view.

(9) The student develops employability characteristics. 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) create a career portfolio to document work experiences, licenses, certifications, and work samples; and

(E) 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 an increasing 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 good photographic composition and layout;

(G) demonstrate knowledge of the characteristics of different types of photographic media;

(H) demonstrate knowledge of the basics of black and white and color photography processes;

(I) demonstrate knowledge of photographic lighting techniques;

(J) identify characteristics of various types of photographic paper;

(K) demonstrate an understanding of standard conventions for mounting, matting, and framing;

(L) produce a variety of photographs using current, industry-standard production processes; and

(M) evaluate photographs using principles of art, commercial photography standards, and critical-thinking skills.

§130.92. *Advanced Commercial Photography (Two to Three Credits).*

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Commercial Photography.

(b) Introduction. Careers in commercial photography span all aspects of the industry from setting up a shot to delivering products in a competitive market. Within this context, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio/Video 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.

(c) 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 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 brochures; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement, percentages, depth of field, aperture, resolution, and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; and applying measurement 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 such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information 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; 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) conduct and participate in meetings to accomplish work tasks by developing meeting goals, objectives, and agendas; preparing for and conducting meetings to achieve objectives within scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedure, as needed, to conduct meetings; 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 commercial photography. 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 develops employability characteristics. 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 resumé and letter of application, completing a job application, and demonstrating effective interview skills;

(D) maintain a career portfolio to document work experiences, licenses, certifications, and work samples; and

(E) 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 increasing 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) use principles of commercial photography;

(D) use appropriate cameras and lenses;

(E) apply appropriate photographic composition and layout principles;

(F) use appropriate black and white and color photography processes;

(G) apply effective photographic lighting techniques;

(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, and framing photographs;

(K) use appropriate current, industry-standard production processes to produce photographs; and

(L) evaluate photographs using principles of art, commercial photography standards, and critical-thinking skills.

§130.93. Fashion Design (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Arts, Audio/Video Technology, and Communications.

(b) Introduction. 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/Video Technology, and Communications career cluster, students will be expected to develop an understanding of fashion and the textile and apparel industries.

(c) 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 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 patterns, brochures, advertisements, and press releases; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; 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 such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) give 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for fashion, textiles, and apparel projects.

(5) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) employ emergency procedures.

(6) 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.

(7) The student applies ethical decision making and understands and complies with laws regarding use of technology in fashion, textiles, and apparel. The student is expected to:

(A) exhibit ethical conduct related to interacting with others such as client confidentiality, privacy of sensitive content, and providing proper credit for ideas;

(B) discuss and apply copyright laws in relation to fair use and duplication of materials; and

(C) analyze the impact of the fashion industry on society, including concepts related to persuasiveness, marketing, and point of view.

(8) The student develops employability characteristics. 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 work experiences, licenses, certifications, and work samples; and

(E) 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 understanding of fashion and the textile and apparel industries. The student is expected to:

(A) analyze the nature and scope of fashion by:

(i) explaining the importance of fashion;

(ii) demonstrating knowledge of fashion history relative to current fashions;

(iii) describing the spectrum of fashion businesses;

(iv) identifying prominent fashion publications;

(v) summarizing the fashion process; and

(vi) using appropriate terminology;

(B) use knowledge of textile and apparel manufacturing systems by:

(i) summarizing aspects of the textile and apparel industries;

(ii) comparing the organizational structures common in textile and apparel manufacturing;

(iii) determining ethical practices within the textile and apparel industries; and

(iv) describing factors that contribute to a safe working environment;

(C) evaluate factors influencing the apparel industry by:

(i) describing the interrelationship of the apparel industry to the United States and international economies;

(ii) explaining the impact of labor laws;

(iii) summarizing procedures within the apparel industry that protect the environment; and

(iv) describing technological advancements influencing the apparel industry;

(D) analyze factors that impact consumer purchases of fashion and apparel accessories by:

(i) describing social, cultural, and life cycle influences on fashion and apparel preferences and management;

(ii) explaining how fashion trends are determined;  
(iii) analyzing the influence of advertising on consumer apparel choices;

(iv) evaluating textile products as to suitability for varied apparel uses; and

(v) determining apparel management techniques for individuals with special needs;

(E) select proper care and maintenance practices for apparel by:

(i) interpreting labeling information to determine care procedures for apparel products;

(ii) evaluating clothing care products and equipment;

(iii) determining proper equipment and services related to care, maintenance, and storage of apparel;

(iv) identifying proper safety procedures when using care products and equipment; and

(v) analyzing the impact of clothing care requirements on clothing selection and the clothing budget;

(F) apply skills related to commercial care of clothing by:

(i) demonstrating procedures to receive, mark, and identify laundry or dry cleaning;

(ii) determining appropriate laundry and dry cleaning procedures;

(iii) demonstrating safety and sanitary procedures while laundering, pressing, or dry cleaning;

(iv) applying commercial laundry or dry cleaning techniques; and

(v) demonstrating pressing procedures;

(G) propose ways to effectively manage the apparel dollar by:

(i) proposing practices for effectively managing apparel and accessory costs, care, and maintenance;

(ii) comparing various sources for apparel purchases;

(iii) predicting the impact of technology on consumer apparel purchasing options; and

(iv) developing ideas for recycling apparel;

(H) design apparel products using principles of effective design by:

(i) identifying basic body types;

(ii) determining clothing silhouettes, fabric selection, and design elements appropriate for specific body types;

(iii) using design elements and principles to design products for the human form, including adaptations for individuals with special needs;

(iv) using basic design tools and techniques such as fashion drawing, draping, and flat pattern methods for fitting a garment; and

(v) determining technology applications useful in the apparel design process;

(I) analyze the apparel production process from design concept to finished product by:

(i) analyzing elements and principles of design as related to apparel; and

(ii) outlining the apparel production process;

(J) apply knowledge of fibers, fabrics, and design when evaluating and designing textile products by:

(i) analyzing characteristics and properties of natural and manufactured fibers;

(ii) describing methods of textile production; and

(iii) assessing the effects of various environmental conditions on textiles; and

(K) demonstrate effective repair, alteration, and construction techniques by:

(i) describing principles of quality apparel construction;

(ii) demonstrating appropriate use, selection, and care of equipment, tools, and notions;

(iii) applying design elements when designing, constructing, or altering apparel;

(iv) applying appropriate construction and pressing techniques in garment construction;

(v) applying safety procedures while operating equipment; and

(vi) determining apparel design and alterations to accommodate individuals with special needs.

§130.94. Advanced Fashion Design (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Fashion Design.

(b) Introduction. Careers in fashion span all aspects of the textile and apparel industries. Within this context, in addition to developing advanced knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications career cluster, students will be expected to develop an advanced understanding of fashion, with emphasis on design and production.

(c) 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 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 patterns, brochures, advertisements, and press releases; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; 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 such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) give 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for fashion, textiles, and apparel projects.

(5) 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.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) employ 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) conduct and participate in meetings to accomplish work tasks by developing meeting goals, objectives, and agendas; preparing for and conducting meetings to achieve objectives within scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedure, as needed, to conduct meetings; and

(E) employ mentoring skills to inspire and teach 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;

(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.

(9) The student develops employability characteristics. 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 resumé and letter of application, completing a job application, and demonstrating effective interview skills;

(D) maintain a career portfolio to document work experiences, licenses, certifications, and work samples; and

(E) demonstrate skills in evaluating and comparing employment opportunities.

(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 develops an advanced technical understanding of fashion, with emphasis on design and production. The student is expected to:

(A) describe how garment development and fashion have evolved from ancient times to present day by:

(i) identifying significant historic fashions from early civilizations to today;

(ii) describing social influences that have affected fashion;

(iii) explaining values communicated through clothing in specific historical periods;

(iv) showing the influence of historic fashions on current-year fashion; and

(v) identifying prominent historical designers;

(B) analyze various types of worldwide fashion production by:

(i) describing mass production techniques; and

(ii) describing the development of haute couture;

(C) perform operations for various roles in the fashion industries by:

(i) identifying tasks that employees may perform;

(ii) following procedures identified for performing tasks; and

(iii) applying resource management procedures when completing assigned tasks;

(D) determine textile suitability for specific applications and uses by:

(i) comparing processes for dyeing, printing, and finishing used in the textile industry;

(ii) explaining how finishes affect the characteristics of fabrics; and

(iii) recommending care procedures for various textile products;

(E) determine implications of textile characteristics on apparel and fashion by:

(i) outlining the textile design process from concept to finished product;

(ii) differentiating types and methods of textile production;

(iii) summarizing implications and methods of dyeing, printing, and finishing of textiles;

(iv) determining textile and apparel labeling requirements; and

(v) determining factors affecting the cost of textile products;

(F) determine design influences on the fashion industry by:

(i) explaining the role of leading designers in determining fashion trends;

(ii) analyzing international factors affecting fashion design;

(iii) determining the impact of technology on the design industry; and

(iv) determining the impact of design decisions on product cost;

(G) create a portfolio of fashion designs by:

(i) demonstrating fashion figure drawing;

(ii) applying design elements and principles to create fashion drawings;

(iii) demonstrating the properties and characteristics of color;

(iv) using computer-aided techniques to create fashion designs;

(v) selecting appropriate textiles to use in specific designs; and

(vi) assembling portfolio components to present fashion designs;

(H) produce quality fashion products by:

(i) outlining general procedures and equipment used in apparel design and pattern development;

(ii) identifying the processes for constructing custom made garments;

(iii) describing characteristics of proper fit;

(iv) applying correct procedures used in garment fitting, pattern making, and pattern alteration;

(v) constructing custom made garments using appropriate tools, equipment, and supplies; and

(vi) demonstrating safety practices when completing tasks related to garment construction; and

(I) demonstrate basic techniques in personal fashion image analysis by:

(i) describing techniques used to analyze the fashion image of individual clients;

(ii) explaining 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

(iii) developing a personal fashion image evaluation for an individual.

§130.95. Practicum in Fashion Design (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Advanced Fashion Design.

(b) Introduction. 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/Video 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.

(c) 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 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 patterns, brochures, advertisements, and press releases; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; and applying measurement to solve a problem.

(2) The student implements advanced professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student implements advanced information technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and



spreadsheet or database applications for fashion, textiles, and apparel projects.

(5) The student implements advanced knowledge of fashion, textile, and apparel systems. The student is expected to analyze and summarize the history and evolution of the fashion, textiles, and apparel field.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) employ emergency procedures.

(7) The student implements leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) give formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(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) discuss and apply copyright laws.

(9) The student demonstrates employability characteristics. The student is expected to:

(A) identify and participate in training, education, or certification to prepare for employment;

(B) identify and demonstrate positive work behaviors and personal qualities needed to be employable such as self-discipline, self-worth, positive attitude, integrity, and commitment;

(C) demonstrate skills related to seeking and applying for employment to find and obtain a desired job, including identifying job opportunities, developing a resumé and letter of application, completing a job application, and demonstrating effective interview skills;

(D) maintain a career portfolio to document work experiences, licenses, certifications, and work samples;

(E) demonstrate skills in evaluating and comparing employment opportunities; and

(F) examine employment opportunities in entrepreneurship.

(10) The student implements technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(11) The student implements an increasing understanding of the business aspects of fashion, with emphasis on promotion and retailing. The student is expected to:

(A) describe fundamentals of fashion buying by:

(i) explaining processes for retail buying;

(ii) identifying wholesale market resources;

(iii) comparing various apparel marts;

(iv) analyzing how timing and pricing of fashion apparel and accessories are determined;

(v) analyzing the price of a fashion product;

(vi) describing various types of retail outlets;

(vii) describing how offshore sourcing impacts fashion retailing; and

(viii) composing a scenario plan for retail pricing, sales and inventory, and purchasing;

(B) describe the relationship between marketing and the fashion industry by:

(i) explaining the marketing concept;

(ii) relating marketing functions to the fashion industry;

(iii) explaining how each component of the marketing mix contributes to successful fashion marketing;

(iv) explaining the importance of target markets;

(v) describing advantages and disadvantages of market segmentation and mass marketing;

(vi) researching trends and emerging technologies affecting fashion marketing;

(vii) determining examples of niche marketing;

(viii) describing cultural and societal influences on the fashion market; and

(ix) describing how international marketing has affected the fashion industry;

(C) develop, implement, and evaluate a promotional plan by:

(i) identifying components of the promotional mix such as advertising, visual merchandising, and personal selling;

(ii) demonstrating visual merchandising techniques for fashion goods, services, or ideas;

(iii) analyzing a promotional plan for effectiveness;

(iv) describing deceptive practices in fashion promotion; and

(v) employing ethical practices in promotional activities;

(D) apply marketing techniques when assisting with promotional activities by:

(i) describing various types of business promotion strategies;

(ii) classifying types of customers and their motives for buying textile and apparel products;

(iii) describing roles of public relations and publicity in product promotion;

(iv) explaining the use of promotional activities to market textile and apparel products and services;

(v) planning special fashion events such as fashion shows, trunk shows, retail shows, and educational events;

(vi) creating and developing a fashion show theme;

(vii) developing a scale drawing to illustrate fashion show sets and staging;

(viii) describing all fashion show responsibilities;

and

(ix) writing press releases to publicize promotional activities;

(E) create product displays using the principles of design by:

(i) identifying components used in developing displays;

(ii) determining ways in which design elements and principles are used in the creation of displays;

(iii) describing types and uses of interior and exterior displays; and

(iv) creating window or other displays of fashion and apparel products;

(F) demonstrate effective customer service by:

(i) determining factors that promote quality customer relations;

(ii) evaluating the impact of cultural diversity on customer relations;

(iii) exhibiting skills needed for effective customer service;

and

(iv) creating solutions to specific customer issues;

(v) examining the role of selling fashion products in retail;

(G) identify wholesale settings by:

(i) analyzing motives for consumer fashion purchases;

(ii) describing qualities of an effective salesperson;

(iii) applying appropriate fashion vocabulary in selling situations; and

(iv) demonstrating effective sales techniques from customer approach to closure; and

(H) summarize important business procedures in fashion retailing by:

(i) explaining methods a business uses to control risks such as surveillance, safety training, and loss control;

(ii) explaining the use of inventory information such as preparing financial reports and making buying decisions;

(iii) demonstrating cash and credit transaction methods;

(iv) analyzing data used to make accurate forecasts;

(v) demonstrating knowledge of the fashion buying process such as preparing a buying plan, completing purchase orders, and processing invoices;

(vi) examining operational costs such as markup, markdown, cash flow, and other factors affecting profit; and

(vii) demonstrating procedures for reporting and handling accidents, safety, and security incidents.

§130.96. *Printing and Imaging Technology (One to Two Credits).*

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Arts, Audio/Video Technology, and Communications.

(b) Introduction. Careers in printing span all aspects of the industry, including prepress, press, and finishing and bindery operations. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications career cluster, students will be expected to develop an understanding of the printing industry with a focus on prepress and desktop publishing.

(c) 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 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 brochures, programs, and newsletters; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; and applying measurement 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 such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) give 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information 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 understands printing systems. The student is expected to analyze and summarize the history and evolution of the printing and imaging field.

(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;
- (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) exhibit ethical conduct;
- (B) apply copyright laws in relation to fair use and duplication of materials; and
- (C) analyze the impact of the printing industry on society.

(9) The student develops employability characteristics. The student is expected to:

- (A) identify and 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;
- (D) maintain a career portfolio to document work experiences, licenses, certifications, and work samples;
- (E) demonstrate skills in evaluating and comparing employment opportunities; and
- (F) 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 technical understanding of printing and imaging. The student is expected to:

- (A) employ processes required for the production of various printed products by:
  - (i) understanding the diversity of the printing process;
  - (ii) understanding the impact of the printing industry on the United States economy; and
  - (iii) understanding the impact of emerging technologies in hardware and software applications;
- (B) manage the printing process, including customer service and sales, scheduling, and quality control;
- (C) evaluate customer needs and materials;
- (D) acquire information in a variety of formats;
- (E) evaluate information for accuracy, validity, and usability;
- (F) apply desktop publishing to create products by:
  - (i) using word processing, graphics, or drawing programs;

(ii) applying design elements such as text, graphics, headlines, use of color, and white space;

(iii) applying typography concepts, including font, size, and style;

(iv) applying graphic design concepts such as contrast, alignment, repetition, and proximity;

(v) editing products; and

(vi) developing and referencing technical documentation;

(G) prepare products for printing;

(H) demonstrate knowledge and appropriate use of hardware components, software programs, and storage devices;

(I) demonstrate knowledge of file and cross-platform compatibility;

(J) deliver products in a variety of media; and

(K) evaluate products.

§130.97. *Advanced Printing and Imaging Technology (Two to Three Credits).*

(a) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Printing and Imaging Technology.

(b) Introduction. Careers in printing span all aspects of the industry, including prepress, press, and finishing and bindery operations. Within this context, in addition to developing advanced knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications career cluster, students will be expected to develop an advanced understanding of the printing industry with a focus on press operations.

(c) 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 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 brochures, programs, and newsletters; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; 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 such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information 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 knowledge of printing systems. The student is expected to analyze and summarize the history and evolution of the printing and imaging field.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) employ 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) conduct and participate in meetings to accomplish work tasks by developing meeting goals, objectives, and agendas; preparing for and conducting meetings to achieve objectives within scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedure, as needed, to conduct meetings; and

(E) 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) 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 develops employability characteristics. 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;

(C) demonstrate skills related to seeking and applying for employment to find and obtain a desired job, including identifying

job opportunities, developing a resumé and letter of application, completing a job application, and demonstrating effective interview skills;

(D) maintain a career portfolio to document work experiences, licenses, certifications, and work samples; and

(E) 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) manage the printing process;

(B) prepare customer materials for printing;

(C) explain and apply printing processes related to lithographic, planographic, gravure, intaglio, and screen;

(D) apply knowledge of inks and ink processes used for various types of printing, including identifying ink types and describing how properties of ink affect coverage, color, and color separation;

(E) apply knowledge of papers, including weights and finishes used for various types of printing;

(F) apply offset duplication parts and operation;

(G) perform set-up for printing a single color job;

(H) produce a printed single-color job using an offset duplicator; and

(I) perform cleanup and maintenance of equipment.

§130.98. Practicum in Printing and Imaging Technology (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Advanced Printing and Imaging Technology.

(b) Introduction. Careers in printing span all aspects of the industry, including prepress, press, and finishing and bindery operations. Within this context, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio/Video 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.

(c) 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 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 brochures, programs, and newsletters; and

(B) apply mathematics knowledge and skills by identifying whole numbers, decimals, and fractions applied to measurement and scale; demonstrating knowledge of arithmetic operations; using conversion methods such as fractions to decimals and inches to points; and applying measurement to solve problems.

(2) The student implements advanced communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent such as structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student implements advanced information 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 implements advanced knowledge of printing systems. The student is expected to analyze and summarize the history and evolution of the printing and imaging field.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) employ emergency procedures.

(7) The student implements 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) conduct and participate in meetings to accomplish work tasks by developing meeting goals, objectives, and agendas; preparing for and conducting meetings to achieve objectives within scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedure, as needed, to conduct meetings; and

(E) employ mentoring skills to inspire and teach others.

(8) The student implements ethical decision making and complies with laws regarding use of technology in printing. The student is expected to:

(A) exhibit ethical conduct related to interacting with others such as client confidentiality, privacy of sensitive content, and providing proper credit for ideas;

(B) discuss and apply copyright laws in relation to fair use and duplication of materials; and

(C) analyze the impact of the printing industry on society, including concepts related to persuasiveness, marketing, and point of view.

(9) The student implements employability characteristics. The student is expected to:

(A) identify and participate in training, education, or certification to prepare for employment;

(B) identify and demonstrate positive work behaviors and personal qualities needed to be employable such as self-discipline, self-worth, positive attitude, integrity, and commitment;

(C) demonstrate skills related to seeking and applying for employment to find and obtain a desired job, including identifying job opportunities, developing a resumé and letter of application, completing a job application, and demonstrating effective interview skills;

(D) maintain a career portfolio to document work experiences, licenses, certifications, and work samples;

(E) demonstrate skills in evaluating and comparing employment opportunities; and

(F) examine employment opportunities in entrepreneurship.

(10) 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.

(11) The student implements an advanced technical understanding of professional printing and imaging. The student is expected to:

(A) manage the printing process;

(B) prepare customer documents;

(C) use appropriate printing processes;

(D) apply binding processes, including cutting, folding, and trimming;

(E) calculate paper counts from a stock sheet;

(F) demonstrate folding a variety of print pieces, adapting equipment as needed;

(G) demonstrate saddle stitch, perfect bind, and flat stitching in various printed materials;

(H) demonstrate padding press operations;

(I) use appropriate specialty processes;

(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.

§130.99. Professional Communications (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) Introduction. 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.

(c) 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) present 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 employ critical-thinking and interpersonal skills independently and in teams to solve problems.

(4) The student applies information technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for professional communications projects.

(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 implement personal and classroom safety rules and regulations.

(7) The student develops leadership characteristics. The student is expected to 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; and

(C) analyze the impact of communications on society, including concepts related to persuasiveness, marketing, and point of view.

(9) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to relate to professional communications.

(10) The student develops an understanding of professional communications through exploration of the career cluster. The student is expected to:

(A) develop an understanding of the evolution of the career cluster by:

(i) explaining the history and evolution of career cluster fields;

(ii) defining and using related terminology;

(iii) analyzing foundation elements and principles of career fields; and

(iv) analyzing the communicative effects of career fields;

(B) demonstrate knowledge of various communication processes in professional contexts by:

(i) explaining the importance of effective communication skills in professional contexts;

(ii) identifying the components and functions of the communication process;

(iii) identifying standards for making appropriate communication choices;

(iv) identifying the characteristics of oral language;

(v) analyzing standards for using informal, standard, and technical language appropriately;

(vi) identifying types and effects of nonverbal communication;

(vii) recognizing the importance of effective nonverbal strategies such as a firm handshake, direct eye contact, and appropriate use of space and distance;

(viii) identifying the components of the listening process;

(ix) identifying specific kinds of listening such as critical, deliberative, and empathic;

(x) recognizing the importance of using accurate and complete information as a basis for making communication decisions;

(xi) identifying and analyzing ethical and social responsibilities of communicators; and

(xii) recognizing and analyzing appropriate channels of communication in organizations;

(C) use appropriate interpersonal communication strategies in professional contexts by:

(i) identifying types and purposes of professional communications;

(ii) employing appropriate verbal, nonverbal, and listening skills;

(iii) using communication management skills;

(iv) using professional etiquette and protocol in situations such as making introductions, speaking on the telephone, and offering and receiving criticism;

(v) using clear and appropriate communications with others;

(vi) participating appropriately in conversations;

(vii) communicating effectively in interviews;

(viii) identifying and using appropriate strategies for dealing with differences such as gender, ethnicity, and age; and

(ix) analyzing and evaluating the effectiveness of communications;

(D) communicate effectively in professional group contexts by:

(i) identifying types and purposes of groups;

(ii) analyzing group dynamics and processes;

(iii) identifying and analyzing the roles of group members;

(iv) demonstrating skills for assuming productive roles in groups;

(v) using appropriate verbal, nonverbal, and listening strategies;

(vi) identifying and analyzing leadership styles;

(vii) using effective communication strategies in leadership roles;

(viii) using effective communication strategies for solving problems, managing conflicts, and building consensus in groups; and

(ix) analyzing and evaluating group effectiveness;

(E) make and evaluate formal and informal professional presentations by:

(i) analyzing the audience, occasion, and purpose;

(ii) determining specific topics and purposes for presentations;

(iii) researching topics using primary and secondary sources;

(iv) using effective strategies to organize presentations;

(v) using information to support points in presentations;

(vi) preparing scripts or notes for presentations;

(vii) using visual or auditory aids to enhance presentations;

(viii) using appropriate techniques to manage communication apprehension, build self-confidence, and gain command of the information;

(ix) using effective verbal and nonverbal strategies in presentations;

(x) participating in an informative or persuasive group discussion;

(xi) making individual presentations to inform, persuade, or motivate an audience;

(xii) participating in question-and-answer sessions following presentations;

(xiii) applying critical-listening strategies to evaluate presentations; and

(xiv) evaluating effectiveness of presentations;

(F) use a variety of strategies to acquire information from electronic resources;

(G) acquire electronic information in a variety of formats;

(H) use research skills and electronic communications;

(I) format digital information for appropriate and effective communication by:

(i) defining the purpose of a product;

(ii) identifying the intended audience;

(iii) using the principles of page design to create a product, including leading, kerning, automatic text flow into linked columns, widows, orphans, and text wrap; and

(iv) creating a master template that includes page specifications and other repetitive tasks;

(J) apply desktop publishing to create products by:

(i) using word processing, graphics, or drawing programs;

(ii) applying design elements such as text, graphics, headlines, use of color, and white space;

(iii) applying typography concepts, including font, size, and style;

(iv) applying graphic design concepts such as contrast, alignment, repetition, and proximity;

(v) editing products; and

(vi) developing and referencing technical documentation; and

(K) deliver digital products in a variety of appropriate media.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

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## SUBCHAPTER D. BUSINESS MANAGEMENT AND ADMINISTRATION

### 19 TAC §§130.111 - 130.122

The State Board of Education (SBOE) proposes new §§130.111-130.122, concerning the Texas essential knowledge and skills (TEKS) for business management and administration. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.111. Implementation of Texas Essential Knowledge and Skills for Business Management and Administration.



The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.112. Principles of Business, Marketing, and Finance (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-11.

(b) Introduction. In Principles of Business, Marketing, and Finance, students gain knowledge and skills in economics and private enterprise systems, the impact of global business, 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.

(c) Knowledge and skills.

(1) The student describes the characteristics of business. The student is expected to:

- (A) explain the role of business in a global society;
- (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;
- (G) describe factors that affect the environment; and
- (H) explain how organizations adapt to current markets.

(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 United States economy. The student is expected to:

- (A) compare and contrast the types of economic systems, including traditional, centrally planned, market, and mixed economies;
- (B) identify business cycles;
- (C) summarize the characteristics of the private enterprise system;
- (D) identify factors affecting a business' profits, revenues, and expenses; and
- (E) investigate potential causes of economic decisions such as supply and demand or consumer dollar votes.

(4) The student relates to the impact of international business on the United States economy. The student is expected to:

- (A) compare domestic and world trade; and
- (B) explain the impact of imports and exports on the United States 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 the terms producers, raw-goods producers, manufacturers, builders, trade industries, retailers, wholesalers, and service businesses;
- (C) categorize types of producers in a private enterprise system;
- (D) identify types of retailers;
- (E) explain the role of retailers in a private enterprise system;
- (F) identify examples of wholesalers; and
- (G) 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;
- (C) explain the concept of organized labor and business;
- (D) examine the impact of the law of diminishing returns; and
- (E) describe the concept of economies of scale.

(8) The student analyzes the sale process, techniques used to enhance customer relationships, and the likelihood of making sales. The student is expected to:

- (A) explain the selling process; and
- (B) discuss motivational theories that impact buying behavior such as Maslow's Hierarchy of Needs.

(9) The student demonstrates how to advertise to communicate promotional messages to targeted audiences. The student is expected to:

- (A) proofread ads for effectiveness; and
- (B) analyze ad performance.

(10) The student understands how to increase sales by employing visual merchandising techniques and using special events to increase sales. The student is expected to:

- (A) explain the use of visual merchandising in retailing;

- play;
- (B) distinguish between visual merchandising and display;
  - (C) place merchandise for impact;
  - (D) plan special events; and
  - (E) prepare stores and departments for special events.

(11) 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) describe sources of income such as wages and salaries, interest, rent, dividends, capital gains, and transfer payments;
- (E) explain the time value of money;
- (F) summarize the purposes and importance of credit;

and

(G) explain legal responsibilities associated with financial exchanges.

(12) 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.

(13) The student knows that advertising is the paid form of nonpersonal communication about an identified sponsor's products. The student is expected to:

- (A) list types of advertising media;
- (B) differentiate between product and institutional advertising; and
- (C) identify and evaluate elements of an advertisement.

(14) The student discusses economic concepts impacting prices. The student is expected to:

- (A) explain the principles of supply and demand; and
- (B) describe the functions of prices in markets such as supply and demand.

(15) The student analyzes career opportunities 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.

§130.113. Touch System Data Entry (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-10.

(b) Introduction. 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.

(c) Knowledge and skills.

(1) 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.

(2) 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, keying numbers and symbols, and using capitalization when composing.

(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) display 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) implement the backspace key to correct errors;
- (D) apply speed and accuracy in production of documents; and
- (E) demonstrate mastery of basic grammar, including using punctuation marks, capitalization, and correct sentence structure.

(4) 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.

(5) The student improves level of proficiency in producing complex word-processing business documents. The student is expected to:

(A) refine work habits; and

(B) improve techniques, speed, and accuracy in document production.

(6) 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 manuscripts, tables, reports, legal documents, and business forms; and

(D) compose a variety of business documents under timed situations.

(7) The student develops advanced word-processing skills. The student is expected to:

(A) perform advanced word-processing functions such as creating newspaper-style columns, inserting section breaks, creating templates, selecting styles, applying auto formatting, using borders and shading, defining page setup, converting document formats, searching files, addressing envelopes, creating labels, using mail merge, and customizing the desktop by using toolbars, menus, and shortcut keys; and

(B) apply layout and design concepts in desktop publishing, including graphics, fonts, text boxes, frames, and tables.

(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) prepare and distribute personalized correspondence using mail merge and electronic mail;

(C) relate the social ramifications of computer applications to privacy, values, and ethics;

(D) enhance overall office productivity by responsible use of computer systems;

(E) develop human-relation skills for working in a team environment; and

(F) participate in student leadership activities.

§130.114. Business Information Management I (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Touch Systems Data Entry.

(b) Introduction. 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.

(c) 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) operate a scanner.

(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; and

(B) create directories.

(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 flexibility needed to produce documents to address different computer applications; and

(D) demonstrate writing techniques generating ideas and gathering information relevant to the topic and purpose, maintaining accurate records of outside sources.

(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) enter database structure;
  - (F) define relationships of tables;
  - (G) analyze company's data requirements;
  - (H) design a database to meet business requirements;
- and
- (I) identify database trends.

(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) create a meaningful data set;
  - (D) enter data into databases, tables, and forms;
  - (E) edit data in databases, tables, and forms;
  - (F) create an interface user form for easier entry of data;
- and
- (G) 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;
- (C) create and print reports; and
- (D) manipulate data in the database management system.

(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 and techniques;
- (C) discuss the importance of ethics in data mining;
- (D) demonstrate basic data mining techniques; and
- (E) interpret data mining findings.

(10) The student uses project management processes to plan a business project. The student is expected to:

- (A) initiate a business project;
- (B) design a business project; and
- (C) participate in leadership and career development activities.

(11) The student applies spreadsheet technology. The student is expected to:

- (A) perform mathematical processes, including:
  - (i) addition, subtraction, multiplication, and division;
  - (ii) percentages and decimals;
  - (iii) order of operations principle;
  - (iv) estimation; and
  - (v) prediction of patterns of data; and

(B) formulate and produce solutions to a variety of business problems, including:

- (i) budget, personal, and business;
- (ii) payroll;
- (iii) inventory;
- (iv) invoices;
- (v) balance sheets;
- (vi) profit-loss statements;
- (vii) income tax preparation;
- (viii) charts and graphs; and
- (ix) conversion of foreign currencies.

(12) 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; and
- (C) determine the appropriate technology to create and deliver an effective presentation.

§130.115. Business Information Management II (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Business Information Management I.

(b) Introduction. 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.

(c) Knowledge and skills.

(1) The student demonstrates project management processes to conduct a business project. The student is expected:

- (A) implement a project;
- (B) manage a project team;
- (C) monitor a business project;
- (D) minimize a business project's errors; and
- (E) conclude 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 the workplace. The student is expected to:

(A) employ verbal skills when obtaining and conveying information;

(B) demonstrate use of content, technical concepts, and vocabulary when analyzing information and following directions;

(C) record information needed to present a report on a given topic or problem;

(D) write internal and external business correspondence that conveys information effectively using correct grammar, spelling, punctuation, and capitalization;

(E) communicate with coworkers to clarify workplace objectives; and

(F) communicate effectively with customers and coworkers to foster positive relationships.

(3) The student describes, locates, organizes, and references written information from various sources to communicate with coworkers and clients. The student is expected to:

(A) locate written information used to communicate with coworkers and customers;

(B) organize information to use in written and oral communication; and

(C) reference the sources of information.

(4) The student evaluates and uses information resources to accomplish specific occupational tasks. The student is expected to:

(A) use informational texts, Internet websites, and technical materials to review and apply information sources for occupational tasks; and

(B) evaluate the reliability of information from informational texts, Internet websites, and technical materials and resources.

(5) 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 and interest;

(E) align presentation strategies to the intended audience; and

(F) implement multimedia strategies for presentations.

(6) The student interprets verbal and nonverbal behaviors to enhance communication with coworkers and clients. The student is expected to:

(A) interpret verbal behaviors when communicating with clients and coworkers; and

(B) distinguish nonverbal behaviors when communicating with clients and coworkers.

(7) The student applies active listening skills to obtain and clarify 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) interpret verbal and nonverbal behaviors to enhance communication;

(D) apply active listening skills to obtain and clarify information; and

(E) use academic skills to facilitate effective written and oral communication.

(8) The student develops and interprets tables, charts, and figures to support written and oral communication. The student is expected to:

(A) create tables, charts, and figures to support written and oral communication; and

(B) interpret tables, charts, and figures used to support written and oral communication.

(9) The student demonstrates listening and speaking with diverse individuals to enhance communication skills. The student is expected to:

(A) apply factors and strategies for communicating with a diverse workforce; and

(B) demonstrate the ability to communicate and resolve conflicts within a diverse workforce.

(10) The student demonstrates public relations skills to increase internal and external customer satisfaction. The student is expected to:

(A) communicate effectively when developing positive customer relationships; and

(B) support and maintain a multimedia website.

(11) The student designs solutions to mathematical business problems using spreadsheet technology. The student is expected to:

(A) recognize and apply lookup tables, built-in functions, macros, and advanced charts and graphs;

(B) determine the uses of spreadsheets with currencies other than the dollar based on current market value; and

(C) create and interpret financial statements, including:

(i) comparisons and projections;

(ii) predictions and forecasts;

(iii) trend analyses; and

(iv) charts and graphs.

(12) The student documents technical knowledge and skills. The student is expected to:

(A) prepare a professional electronic 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) sample letter of application;

(vi) abstract of key points of accomplishments;

(vii) resumé;

(viii) samples of work; and

(ix) evaluation from a teacher; and

(B) prepare and present the portfolio to all interested stakeholders such as in a multimedia presentation.

§130.116. Business English (One Credit).

(a) General requirements. This course is recommended for students in Grade 12. Prerequisites: English III and Touch Systems Data Entry.

(b) Introduction. Students recognize, evaluate, and prepare for a rapidly evolving global business environment that requires flexibility and adaptability. 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 are expected to plan, draft, and complete written compositions on a regular basis. Students edit their papers for clarity, engaging language, and the correct use of the conventions and mechanics of written English and produce final, error-free drafts for business reproduction.

(c) Knowledge and skills.

(1) 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 to ensure coherence, logical progression, and support for ideas.

(2) The student employs appropriate research techniques to produce effective business communication. The student is expected to:

(A) incorporate information from printed copy 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;

(F) research and develop a business project incorporating data imported from various sources; and

(G) develop and communicate a vision and mission statement for a company.

(3) The student exchanges information via telecommunications software such as email, images, and online information services with appropriate supervision. The student is expected to:

(A) send and receive information via telecommunications technology;

(B) evaluate which telecommunications methods are most appropriate to a given situation; and

(C) employ appropriate business ethics and correct etiquette when using telecommunications.

(4) The student illustrates proficiency in interpersonal communication. The student is expected to:

(A) develop business and 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.

(5) 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) explain the types of communication problems that are possible when conducting business among different cultures.

(6) 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.

(7) The student documents technical knowledge and skills. The student is expected to:

(A) prepare a professional electronic portfolio to include:

(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 and professional organizations;

(iv) sample letter of application;

(v) resumé;

(vi) samples of work; and

(vii) evaluation from a teacher; and

(B) present the portfolio to all interested stakeholders such as in a multimedia presentation.

(8) 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; and

(B) evaluate the structures of text such as format or headers for their clarity and organizational coherence and for the effectiveness of their graphic representations.

(9) The student uses comprehension skills to analyze how words, images, graphics, and sounds work together in various forms to impact meaning. The student applies earlier standards 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 such as layout, pictures, typeface in print media, images, text, or sound in electronic journalism used in multi-layered media;

(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.

(10) 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 a sustained and persuasive way such as using outlines, note taking, graphic organizers, or lists and develop drafts in timed and open-ended situations that include transitions and the rhetorical devices to convey meaning;

(C) revise drafts to clarify meaning and achieve specific rhetorical purposes, consistency of tone, and logical organization by rearranging the words, sentences, and paragraphs to employ tropes such as metaphors, similes, analogies, hyperbole, understatement, rhetorical questions, or irony and schemes such as parallelism, antithesis, inverted word order, repetition, or reversed structures and by adding transitional words and phrases;

(D) edit drafts for grammar, mechanics, and spelling; and

(E) revise final draft in response to feedback from peers and teacher and publish written work for appropriate audiences.

(11) 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:

(i) effective introductory and concluding paragraphs and a variety of sentence structures;

(ii) rhetorical devices and transitions between paragraphs;

(iii) a clear thesis statement or controlling idea;

(iv) a clear organizational schema for conveying ideas;

(v) relevant and substantial evidence and well-chosen details;

(vi) information on all relevant perspectives and consideration of the validity, reliability, and relevance of primary and secondary sources; and

(vii) an analysis of views and information that contradict the thesis statement and the evidence presented for it;

(B) write procedural and work-related documents such as resumés, proposals, college applications, or operation manuals that include:

(i) a clearly stated purpose combined with a well-supported viewpoint on the topic;

(ii) appropriate formatting structures such as headings, graphics, or white space; and

(iii) accurate technical information in accessible language; and

(C) produce a multimedia presentation such as a documentary, class newspaper, docudrama, infomercial, visual or textual parody, or theatrical production with graphics, images, and sound that appeals to a specific audience and synthesizes information from multiple points of view.

(12) The student understands the function of and uses the conventions of academic language when speaking and writing. The student continues to apply earlier standards with greater complexity. The student is expected to:

(A) use and understand the function of different types of clauses and phrases such as adjectival, noun, or adverbial clauses and phrases; and

(B) use a variety of correctly structured sentences such as compound, complex, or compound-complex.

(13) 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.

(14) The student spells correctly. The student is expected to spell correctly, including using various resources to determine and check correct spellings.

(15) The student organizes and presents ideas and information according to the purpose of the research and the audience. The student is expected to synthesize the research into an extended written or oral presentation that:

(A) provides an analysis that supports and develops personal opinions, as opposed to simply restating existing information;

(B) uses a variety of formats and rhetorical strategies to argue for the thesis;

(C) develops an argument that incorporates the complexities of and discrepancies in information from multiple sources and perspectives while anticipating and refuting counter-arguments;

(D) uses a style manual such as *Modern Language Association* or *The Chicago Manual of Style* to document sources and format written materials; and

(E) is of sufficient length and complexity to address the topic.

(16) The student speaks clearly and to the point using the conventions of language. The student continues to apply earlier standards with greater complexity. The student is expected to formulate sound arguments by using elements of classical speeches such as introduction, first and second transitions, body, and conclusion; the art of persuasion; rhetorical devices; eye contact; speaking rate such as pauses for effect; volume; enunciation; purposeful gestures; and conventions of language to communicate ideas effectively.

(17) The student works productively with others in teams. The student continues to apply earlier standards with greater complexity. The student is expected to participate productively in teams, offering ideas or judgments that are purposeful in moving the team toward goals, asking relevant and insightful questions, tolerating a range of positions and ambiguity in decision making, and evaluating the work of the group based on agreed-upon criteria.

§130.117. Business Law (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 11-12.

(b) Introduction. Students analyze the social responsibility of business and industry regarding the significant issues relating to the legal environment, business ethics, torts, contracts, negotiable financial instruments, personal property, sales, warranties, business organizations, concept of agency and employment, and real property. Students apply technical skills to address business applications of contemporary legal issues. 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.

(c) Knowledge and skills.

(1) 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 categories and types of courts and traditional court procedures;

(C) differentiate between business torts and crimes; and

(D) comprehend the rationale for government regulations of business activities.

(2) The student identifies the principles of contracts in business. The student is expected to:

(A) explain the nature and 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.

(3) 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.

(4) 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.

(5) 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) explain negotiation and discharge;

(E) assess the liabilities of the parties and 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.

(6) The student analyzes the concepts of agency and employment. The student is expected to:

(A) establish the nature and creation of an agency;

(B) explain the operation and termination of an agency;



- relations;
- (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.

(7) 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.

(8) The student explains risk bearing devices. 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.

(9) 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.

(10) 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 and team-building skills involving situations with coworkers, supervisors, and clients; and
- (B) participate in leadership and career development activities.

§130.118. Global Business (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. 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 and postsecondary education. Students apply technical skills to address global business applications of emerging technologies. Students develop a foundation in the economical, financial, technological, interna-

l, 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.

(c) Knowledge and skills.

(1) The student identifies steps in implementing the background for starting an international operation. The student is expected to:

- (A) define global business;
- (B) describe the rise of global linkages in global business;
- (C) describe the position of the United States in global trade; and
- (D) list advantages and problem areas for United States firms wanting to enter global business.

(2) The student analyzes the theories of global trade and investments. The student is expected to:

- (A) explain the advantages of specialization;
- (B) identify the concept of comparative advantage; and
- (C) distinguish between portfolio investment and direct investment.

(3) 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.

(4) The student identifies the importance of international financial markets globally. 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.

(5) The student demonstrates 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.

(6) The student identifies the importance of different trade and investment policies controlling trade. The student is expected to:

- (A) understand the role of foreign aid in global trade and investment;

(B) explain the goals and function 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 give reasons for controlling exports; and

(D) research cases and issues on global trade using appropriate online technology.

(7) 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 effects of controls and 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.

(8) 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.

(9) The student demonstrates the process in implementing a global operation. The student is expected to:

(A) identify the various forms of entry strategies used by firms to initiate global business activity;

(B) give examples of indirect exporting and importing;

(C) evaluate the advantages and disadvantages of licensing;

(D) describe the functions of export management companies;

(E) research current cases on imports, exports, and balance of trade using appropriate online technology;

(F) relate effects of copyrights and trademarks and intellectual property rights on global business; and

(G) identify advertising media used in foreign markets such as newspaper, radio, television, Internet, and magazine.

(10) 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, both 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.

(11) 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.

(12) 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.

(13) 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.

(14) 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.

§130.119. Human Resources Management (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 11-12.

(b) Introduction. Students recognize, evaluate, and prepare for a rapidly evolving global business environment that requires flexibility and adaptability. Students analyze the primary functions of human resources management, which include recruitment, selection, training, development, and compensation. Topics will incorporate social responsibility of business and industry. Students develop a foundation in the economical, financial, technological, international, social, and ethical aspects of human resources in order to become competent managers, employees, and entrepreneurs. Students incorporate a broad base of knowledge that includes the legal, managerial, financial, ethical, and international dimensions of business to make appropriate human resources decisions.

(c) 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 the contemporary social and workplace issues facing human resources managers such as globalization, diversity, new technologies, knowledge workers, and changing trends in the workplace;

(D) explain how contemporary human resources deals with change such as proactive, reactive, downsizing, outsourcing, offshoring, and employee leasing;

(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:

- (i) advice and counsel;
- (ii) service;
- (iii) policy formulation and implementation; and
- (iv) employee advocacy;

(G) explain the basic competencies required of an effective human resources manager, including business mastery, human resources mastery, change mastery, and personal credibility; and

(H) define the need and proper steps for strategic planning in human resources, including:

- (i) mission, vision, and values;
- (ii) environmental analysis;
- (iii) internal analysis;
- (iv) strategy formulation;
- (v) strategy implementation; and
- (vi) 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, including:

- (i) sexual orientation;
- (ii) immigration reform and control; and
- (iii) Uniform Guidelines on Employee Selection

Procedures;

(E) explain the proper procedures and requirements 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 pre-employment 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:

(i) supervisors and managers;

(ii) peers;

(iii) customers or clients; and

(iv) 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:

(i) Davis-Bacon Act;

(ii) Walsh-Healy Act; and

(iii) Fair Labor Standards Act such as minimum wage and overtime;

(G) identify some of the contemporary issues regarding compensation, including:

(i) equal pay;

(ii) wage-rate compression;

(iii) comparable worth;

(iv) low salary budgets; and

(v) employee stock ownership plan;

(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:

(i) Federal Insurance Contributions Act Tax;

(ii) Federal Unemployment Tax Act;

(iii) workers' compensation;

(iv) Consolidated Omnibus Budget Reconciliation

Act;

(v) Family and Medical Leave Act; and

(vi) 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 safety rules and investigating and recording any workplace accidents;

(E) demonstrate what can be done to prevent or address workplace violence;

(F) explain what can be done to address employee stresses in the workplace; and

(G) 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) define discipline and 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:

(i) Railway Labor Act;

(ii) Norris-LaGuardia Act;

(iii) Wagner Act; and

(iv) Landrum-Griffin Act;

(F) define why and how employees unionize;

(G) explain employer tactics used to oppose unionization and what employers 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, including 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:

(i) foreign competition;

(ii) technological change;

(iii) decline in union membership; and

(iv) 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 how human resources addresses managing across borders;

(B) identify the difficulties and solutions for recruiting and selecting employees internationally;

(C) discuss how to deal with compensation issues for management and employees 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 and different national approaches to labor participation in management.

(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 such as local human resources.

§130.120. Virtual Business (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Touch System Data Entry.

(b) Introduction. 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. Students will be able to identify steps needed to locate customers, set fees, and develop client contracts. Student will be able to provide administrative, creative, and technical services using advanced technological modes of communication and data delivery. The student builds a functional website that incorporates the essentials of a virtual business.

(c) 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 assistants and their clients;

(C) assess personality characteristics to determine suitability for being a self-employed virtual business office employee; and

(D) inventory skills, interests, strengths, and weaknesses to determine appropriate services to offer.

(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 and advertising 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) appropriately set 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 and determine appropriate recordkeeping and tax issues; and

(C) apply fundamental bookkeeping skills for a virtual business office.

(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 and properly set up a virtual business office and research support resources; and

(B) 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) identify resources needed for a project;

(B) develop a project plan and apply project-management tools to monitor project progress;

(C) evaluate project results; and

(D) coordinate work with that of team members and assist with overflow work.

§130.121. Business Management (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. Students recognize, evaluate, and prepare for a rapidly evolving global business environment that requires flexibility and adaptability. Students analyze the primary functions of management and leadership, which are planning, organizing, staffing, directing or leading, and controlling. Topics will incorporate social responsibility of business and industry. Students develop a foundation in the

economical, financial, technological, international, social, and ethical aspects of business to become competent managers, employees, and entrepreneurs. Students incorporate a broad base of knowledge that includes the legal, managerial, marketing, financial, ethical, and international dimensions of business to make appropriate management decisions.

(c) 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, direct lending, 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;
- (D) identify steps of the management decision-making process, including:
  - (i) identify the problem or opportunity;
  - (ii) gather relevant information or data;
  - (iii) determine alternative courses of action;
  - (iv) evaluate each alternative;
  - (v) compute an optimal decision;
  - (vi) implement the chosen course of action; and
  - (vii) evaluate the decision feedback and determine 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:
    - (i) line;
    - (ii) line and staff; and
    - (iii) 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) explain or define the major federal employment laws;
  - (B) define adverse impact and employment discrimination;
  - (C) identify sexual harassment in the workplace;
  - (D) explain the methods of recruiting potential employees;
  - (E) define the selection process for new employees;
  - (F) explain the needs and types of training for newly hired employees;
  - (G) define professional development in terms of current employees;
  - (H) explain how employees should be compensated in a competitive environment;
  - (I) define the potential need for downsizing;
  - (J) rationalize the costs of employee turnover and what can be done to reduce turnover rate;
  - (K) explain the need and benefits of a diverse workforce; and
  - (L) 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 and functions of a leader;
- (H) explain the traits of an effective leader;
- (I) define the different types and styles of leadership and explain when each is appropriate, including autocratic, Democratic, and free rein;
- (J) define the management communication process;
- (K) explain the concept of employee perception;
- (L) analyze the communication process;
- (M) compare and contrast formal and informal communication; and
- (N) explain how to improve communication within an organization.

(6) The student understands the necessity of controlling. 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 and services;
- (H) explain International Standards Organization (ISO) standards, including ISO 9000 and ISO 14000;
- (I) explain the Baldrige National Quality Award;
- (J) explain the Deming Award;
- (K) define Total Quality Management;
- (L) explain service operations;
- (M) analyze manufacturing operations;
- (N) define inventory in the management context;
- (O) explain the fiscal importance of managing and controlling inventory; and
- (P) research recent winners of the Baldrige and Deming awards using appropriate online technology and critique the winners.

(7) The student knows self-development techniques and interpersonal skills to accomplish management 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 such as involvement with appropriate student and local management associations.

(8) The student demonstrates project-management skills to improve workflow and minimize costs. The student is expected to:

- (A) identify resources needed for a project;

- (B) develop a project plan; and
- (C) apply project-management tools to monitor progress.

§130.122. Practicum in Business Management (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grade 12. Recommended prerequisites: Touch System Data Entry and Business Management.

(b) Introduction. The Practicum 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 economical, 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.

(c) 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, including 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 dress, grooming, and personal protective equipment as appropriate; and
- (G) comply with practicum setting safety 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 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.

(3) 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.

(4) 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 appropriate person or department;

(C) coordinate arrangements for participants;

(D) follow calling and login procedures; and

(E) troubleshoot any problems.

(5) The student performs scheduling functions electronically to facilitate on-time, prompt completion of work activities. The student is expected to:

(A) create a calendar or schedule;

(B) maintain an appointment calendar;

(C) verify appointments;

(D) coordinate travel arrangements; and

(E) set up meeting arrangements.

(6) 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;

(C) apply advanced presentation applications;

(D) construct advanced database applications;

(E) demonstrate advanced spreadsheet applications; and

(F) create a web page for business applications.

(7) The student uses spreadsheet software to create business-related spreadsheets. The student is expected to:

(A) select appropriate software for creating spreadsheets;

(B) enter labels and values into spreadsheet cells; and

(C) format labels and values.

(8) The student enters formulas and functions in a spreadsheet document. The student is expected to:

(A) develop formulas and enter appropriate functions; and

(B) verify formulas and functions with sample values.

(9) The student selects a format and procedure to produce memoranda appropriate for a given purpose. The student is expected to:

(A) select proper layout such as direct and indirect;

(B) apply correct grammar, spelling, punctuation, and other English mechanics;

(C) prepare correct memoranda format;

(D) enter data without error; and

(E) disseminate to appropriate persons.

(10) The student selects document type and layout to produce business letters. The student is expected to:

(A) determine use of documents for purposes such as sales, claims, and good news;

(B) prepare correct layout;

(C) apply correct grammar, spelling, punctuation, and other English mechanics; and

(D) enter data without error.

(11) The student selects appropriate writing methods to produce a variety of reports. The student is expected to:

(A) determine purpose of a report;

(B) select proper method of writing such as short and informal;

(C) prepare tables, graphs, and graphics;

(D) use references and prepare notations;

(E) apply correct grammar, spelling, punctuation, and other English mechanics; and

(F) enter data without error.

(12) The student records transactions to manage cash fund accounts, tallies receipts, and proofs work to prepare bank deposits. The student is expected to:

(A) maintain records of petty cash disbursements;

(B) replenish petty cash;

(C) increase or decrease cash fund accounts as necessary;

(D) prepare endorsement;

(E) reconcile; and

(F) verify totals.

(13) The student demonstrates accurate bookkeeping guidelines to reconcile bank statements. The student is expected to:

(A) compare an electronic or a manual checkbook to a bank statement;

(B) add deposits not credited;

(C) subtract checks not cleared;

(D) subtract bank charges from a checkbook; and

(E) ensure a bank statement balance equals a checkbook balance.

(14) 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 in order to accomplish the following objectives and tasks:

(i) demonstrate effective working relationships using interpersonal skills;

(ii) use positive interpersonal skills to work cooperatively with others;

(iii) negotiate effectively to arrive at decisions;

(iv) demonstrate respect for individuals, including those from different cultures, genders, and backgrounds; and

(v) demonstrate sensitivity to and value for diversity.

(15) The student maintains work flow to enhance productivity. The student is expected to:

(A) organize and prioritize work;

(B) complete assigned tasks in a timely manner;

(C) coordinate work with that of team members;

(D) assist with overflow work; and

(E) coordinate submission of proposals.

(16) The student implements processes for purchasing business supplies, equipment, and services. The student is expected to:

(A) maintain vendor and supplier relationships;

(B) conduct vendor and supplier searches; and

(C) negotiate terms with vendors.

(17) 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.

(18) The student identifies career opportunities in business occupations and implements job-seeking skills to obtain employment. The student is expected to:

(A) assess personal marketability;

(B) identify appropriate employment opportunities and those emerging through technology by analyzing established resources; and

(C) use job-search strategies, including:

(i) writing a letter of application;

(ii) preparing a resumé;

(iii) using networking techniques to identify employment opportunities;

(iv) completing a job application;

(v) interviewing for a job; and

(vi) writing a follow-up letter after a job interview.

(19) The student applies principles of effective human relations skills. The student is expected to:

(A) demonstrate professional qualities, including positive attitude, loyalty, and diplomacy;

(B) demonstrate professionalism through personal appearance, neatness of work area, and correctness of completed tasks;

(C) identify and demonstrate skills needed to maintain effective work relations with colleagues;

(D) demonstrate a respect for individual differences;

(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;

(G) plan, staff, lead, and organize human resources to enhance productivity and satisfaction;

(H) assist with staff growth and development and train staff on system usage; and

(I) implement methods for improving employee satisfaction.

(20) The student uses employability skills to gain a position in a company. The student is expected to:

(A) identify employment opportunities and complete job search procedures such as job applications and W-4 forms;

(B) demonstrate proper interview techniques, professional dress, and appearance; and

(C) create appropriate documents such as applications and thank you letters.

(21) The student identifies skills and attributes necessary for professional advancement. The student is expected to:

(A) evaluate and compare employment options such as salaries, benefits, and prerequisites; and

(B) demonstrate proper interview techniques in various situations.

(22) The student develops skills for success in the workplace. The student is expected to:

(A) explain importance of and model appropriate dress, hygiene, and demeanor for the work assignment;

(B) demonstrate dependability, punctuality, and initiative;

(C) exhibit productive work habits and attitudes;

(D) demonstrate the ability to work with the other employees to promote the organization and complete assigned tasks;

(E) prioritize work to fulfill responsibilities and meet deadlines; and

(F) identify and rank tangible and intangible rewards of work.

(23) The student applies work ethics, job expectations, multicultural considerations, and communication skills in the workplace. The student is expected to:

(A) illustrate how personal integrity affects human relations on the job;

(B) demonstrate characteristics of successful working relationships such as teamwork, self-control, and ability to accept criticism;

(C) analyze employer expectations;

(D) demonstrate a respect for the rights of others;

(E) communicate effectively using verbal, written, and electronic channels;

(F) identify ethical standards; and

(G) compare organizational policies and procedures.

(24) The student applies word-processing technology. The student is expected to:

(A) identify customary styles of business documents;

(B) input data using the touch system;

(C) demonstrate basic writing techniques;

(D) produce business documents;

(E) edit a variety of written documents; and

(F) identify technologies that enhance or replace the touch system of data entry.

(25) The student demonstrates project-management skills to improve workflow and minimize costs. The student is expected to:

(A) identify resources needed for a project;

(B) develop a project plan; and

(C) apply project-management tools to monitor progress.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 475-1497



## SUBCHAPTER E. EDUCATION AND TRAINING

### 19 TAC §§130.141 - 130.145

The State Board of Education (SBOE) proposes new §§130.141-130.145, concerning the Texas essential knowledge and skills

(TEKS) for education and training. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.141. Implementation of Texas Essential Knowledge and Skills for Education and Training.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.142. Principles of Education and Training (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) Introduction. Principles of Education and Training is designed to introduce learners to the various careers available within the education and training career cluster. Students use self-knowledge and educational and career information to analyze various careers within the education and training career cluster. Students will also gain an understanding of the basic knowledge and skills essential to careers within the education and training career cluster. Students will develop

a graduation plan that leads to a specific career choice in the student's interest area.

(c) Knowledge and skills.

(1) The student completes career investigations within the education and training career cluster. The student is expected to:

(A) identify and describe the various careers found within the education and training career cluster;

(B) analyze transferable skills among a variety of careers within the education and training career cluster;

(C) recognize the impact of career choice on personal lifestyle; and

(D) assess the importance of productive work habits and attitudes.

(2) The student understands societal impacts within the education and training career cluster. The student is expected to:

(A) summarize political and historical trends that have influenced the development of education across the United States;

(B) identify cultural and societal changes that have affected educational systems across the United States; and

(C) use labor market information, knowledge of technology, and societal or economic trends to forecast job profiles within the education and training career cluster.

(3) The student explores careers in administration and administrative support. The student is expected to:

(A) summarize the various roles and responsibilities of professionals in the fields of administration and administrative support;

(B) describe typical personal characteristics, qualities, and aptitudes of professionals in the fields of administration and administrative support;

(C) investigate education and training alternatives after high school for a career choice within the student's interest areas; and

(D) formulate education and training degree plans for various occupations within the fields of administration and administrative support.

(4) The student explores careers in professional support services. The student is expected to:

(A) summarize the various roles and responsibilities of professionals in the field of professional support services;

(B) describe typical personal characteristics, qualities, and aptitudes of professionals in the field of professional support services;

(C) investigate education and training alternatives after high school for a career choice within the student's interest areas; and

(D) formulate education and training degree plans for various occupations within the field of professional support services.

(5) The student explores careers in teaching and training. The student is expected to:

(A) summarize the various roles and responsibilities of professionals in the fields of teaching and training;

(B) describe typical personal characteristics, qualities, and aptitudes of professionals in the fields of teaching and training;

(C) investigate education or training alternatives after high school for a career choice within the student's interest areas; and

(D) formulate education or training degree plans for various occupations within the fields of teaching and training.

(6) The student investigates career opportunities within the education and training career cluster. The student is expected to:

(A) compare and contrast the specific career options found within each education and training cluster program of study;

(B) use labor market information, knowledge of technology, and societal and economic trends to forecast job profiles within each cluster program of study; and

(C) use personal interests and aptitudes to identify a specific cluster program of study as a potential field of study.

(7) The student explores options in education and career planning. The student is expected to:

(A) develop a graduation plan that leads to a specific career choice in the area of interest;

(B) identify high school and dual enrollment courses related to specific career cluster programs of study;

(C) identify and compare technical and community college programs that align with interest areas; and

(D) identify and compare university programs and institutions that align with interest areas.

§130.143. Human Growth and Development (One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Education and Training.

(b) Introduction. Human Growth and Development is an examination of human development across the lifespan with emphasis upon research, theoretical perspectives, and common physical, cognitive, emotional, and social developmental milestones. The course covers material that is generally taught in a postsecondary, one-semester introductory course in developmental psychology or human development.

(c) Knowledge and skills.

(1) The student understands historical, theoretical, and research perspectives of human growth and development. The student is expected to:

(A) explain the role of theories in understanding human development;

(B) describe theoretical perspectives that influence human development throughout the lifespan;

(C) summarize historical influences on modern theories of human development;

(D) compare and contrast the research methods commonly used to study human development; and

(E) compare and contrast 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) analyze 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) determine 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) discuss 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 three through five 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) discuss 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) determine developmentally appropriate guidance techniques for preschoolers.

(5) The student understands the development of children ages six through ten 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) discuss 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) determine developmentally appropriate guidance techniques for children in the early to middle childhood stage of development.

(6) The student understands the development of adolescents ages 11 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) discuss the influences of the family and society on adolescents; and

(E) determine appropriate guidance techniques for adolescents.

(7) The student understands the importance of care and protection of children. The student is expected to:

(A) determine agencies and services that protect the rights of children;

(B) summarize various resources focusing on children;

(C) predict the impact of changing demographics and cultural diversity on the health and welfare of children;

(D) analyze forms, causes, effects, prevention, and treatment of child abuse;

(E) explain the impact of appropriate health care and safety of children; and

(F) discuss responsibilities of citizens, legislation, and public policies affecting children.

(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) discuss 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) discuss 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) discuss 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 understands the skills necessary for career preparation. The student is expected to:

(A) demonstrate skills, characteristics, and responsibilities of leaders and effective team members;

(B) demonstrate effective methods and obligations for securing, maintaining, and terminating employment;

(C) practice human-relation skills; and

(D) demonstrate effective verbal, non-verbal, written, and electronic communication skills.

(12) The student explores opportunities available in education and training. The student is expected to:

(A) assess personal interests, aptitudes, and abilities as related to the various stages of human growth and development;

(B) evaluate employment and entrepreneurial opportunities and education requirements in the educational field of interest; and

(C) propose short- and long-term education and career goals.

§130.144. Instructional Practices in Education and Training (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Principles of Education and Training and Human Growth and Development.

(b) Introduction. Instructional Practices in Education and Training is a field-based internship 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 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 complete other responsibilities of teachers, trainers, paraprofessionals, or other educational personnel.

(c) Knowledge and skills.

(1) 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) determine knowledge and skills needed by teaching and training professionals;

(C) demonstrate personal characteristics needed by teaching and training professionals;

(D) identify qualities of effective schools; and

(E) investigate possible career options in the field of education and training.

(2) The student understands the learner and the learning process. The student is expected to:

(A) relate principles and theories of human development to teaching and training situations;

(B) relate principles and theories about the learning process to teaching and training situations;

(C) demonstrate behaviors and skills that facilitate the learning process; and

(D) explain the relationship between effective instructional practices and learning differences, learner exceptionality, and special-needs conditions.

(3) The student communicates effectively. The student is expected to:

(A) demonstrate effective verbal, non-verbal, written, and electronic communication skills;

(B) communicate effectively in situations with educators and parents or guardians;

(C) evaluate the role of classroom communications in promoting student literacy and learning; and

(D) demonstrate effective communication skills in teaching and training.

(4) The student plans and develops effective instruction. The student is expected to:

(A) explain the role of the Texas Essential Knowledge and Skills (TEKS) in planning and evaluating instruction;

(B) explain the rationale for having a fundamental knowledge of the subject matter in order to plan and prepare effective instruction;

(C) explain the rationale and process of instructional planning;

(D) describe principles and theories that impact instructional planning;

(E) create clear short- and long-term learning objectives that are developmentally appropriate for students; and

(F) demonstrate teacher planning to meet instructional goals.

(5) The student creates an effective learning environment. The student is expected to:

(A) describe characteristics of safe and effective learning environments;

(B) demonstrate teacher and trainer characteristics that promote an effective learning environment;

(C) identify classroom-management techniques that promote an effective learning environment; and

(D) describe conflict-management and mediation techniques supportive of an effective learning environment.

(6) The student assesses teaching and learning. The student is expected to:

(A) describe the role of assessment as part of the learning process;

(B) analyze the assessment process; and

(C) identify appropriate assessment strategies for use in an instructional setting.

(7) The student understands the relationship between school and society. The student is expected to:

(A) explain the relationship between school and society;

(B) use school and community resources for professional growth; and

(C) use the support of family members, community members, and business and industry to promote learning.

(8) 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.

(9) The student understands the ethics and legal responsibilities in teaching and training. The student is expected to:

(A) describe teacher and trainer characteristics that promote ethical conduct;

(B) analyze ethical standards that apply to the teaching and training profession;

(C) analyze situations requiring decisions based on ethical and legal considerations; and

(D) analyze expected effects of compliance and non-compliance.

(10) 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.

§130.145. Practicum in Education and Training (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grade 12. Recommended prerequisites: Principles of Education and Training, Human Growth and Development, and Instructional Practices in Education and Training.

(b) Introduction. 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 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.

(c) Knowledge and skills.

(1) The student explores the teaching and training profession. The student is expected to:

(A) assess personal characteristics needed to work in the teaching and training profession;

(B) compare schools based on qualities of effectiveness;

(C) formulate a personal philosophy of education; and

(D) create a personal career plan in preparation for a career in the field of education or training.

(2) 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 personal behaviors and skills that facilitate the learning process; and

(D) suggest effective instructional practices to accommodate learning differences, learner exceptionality, and special-needs conditions.

(3) The student communicates effectively. The student is expected to:

(A) assess the effectiveness of personal verbal, non-verbal, written, and electronic communication skills;

(B) communicate effectively in situations with educators and parents or guardians;

(C) evaluate the role of classroom communications in promoting student literacy and learning; and

(D) integrate effective communication skills in teaching or training.

(4) The student plans and uses effective instruction. The student is expected to:

(A) apply principles and theories that impact instructional planning;

(B) develop instructional materials that align with the Texas Essential Knowledge and Skills (TEKS);

(C) assess personal planning to meet instructional goals;

(D) analyze concepts for developing effective instructional strategies;

(E) analyze instructional strategies for effectiveness; and

(F) explain how learner feedback has been used to guide selection and adjustment of instructional strategies.

(5) The student creates and maintains an effective learning environment. The student is expected to:

(A) create and maintain safe and effective learning environments;

(B) integrate teacher or trainer characteristics 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.

(6) The student assesses instruction and learning. The student is expected to:

(A) develop and apply assessments to foster student learning; and

(B) use assessment strategies to promote personal growth and teaching or training improvement.

(7) The student understands the relationship between school and society. The student is expected to:

(A) support learning through advocacy;

(B) select school and community resources for professional growth; and

(C) design activities to build support of family members, community members, and business and industry to promote learning.

(8) The student develops technology skills. The student is expected to:

(A) recommend technology applications appropriate for specific subject matter and student needs; and

(B) integrate the skillful use of technology as a tool for instruction, evaluation, and management.

(9) The student continues development as a teaching or training professional. The student is expected to:

(A) identify strategies and resources for the professional development of educators or trainers;

(B) demonstrate teacher or trainer characteristics that promote ongoing professional development;

(C) use research and assessment to improve teaching or training; and

(D) develop a professional growth plan.

(10) 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.

(11) The student documents technical knowledge and skills. The student is expected to:

(A) update 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) resumé;

(vii) samples of work; and

(viii) evaluation from the practicum supervisor; and

(B) present the portfolio to all interested stakeholders such as in a slide or poster presentation.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902116

Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 475-1497



## SUBCHAPTER F. FINANCE

### 19 TAC §§130.161 - 130.169

The State Board of Education (SBOE) proposes new §§130.161-130.169, concerning the Texas essential knowledge and skills (TEKS) for finance. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills

for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum,



recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.161. Implementation of Texas Essential Knowledge and Skills for Finance.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.162. Money Matters (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Business, Marketing, and Finance.

(b) Introduction. Students will investigate global economics with emphasis on the free enterprise system and its impact on consumers and businesses. Students apply critical-thinking skills to analyze financial options based on current and projected economic factors. Students will gain knowledge and skills necessary to set long-term financial goals based on those options. Students will determine methods of achieving long-term financial goals through investment, tax planning, asset allocation, risk management, retirement planning, and estate planning.

(c) Knowledge and skills.

(1) The student uses career planning concepts, tools, and strategies to explore, obtain, and develop a career in the area of financial planning. The student is expected to:

(A) discuss the nature and benefits of financial planning;

(B) discuss the role of ethics and personal responsibility in financial planning; and

(C) compare and contrast roles, responsibilities, licensing and certification programs for careers related to managing and analyzing personal and corporate financial portfolios, including financial planner, financial manager, financial analyst, controller, risk manager, cash manager, treasurer, and chief financial officer.

(2) 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, debit, 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;

(F) discuss the purposes and importance of credit; and

(G) explain legal responsibilities associated with financial exchanges.

(3) The student describes economic systems. The student is expected to:

(A) compare the types of economic systems and market structures;

(B) explain the concept of private enterprise, including sole proprietorships, partnerships, and corporations;

(C) identify and analyze the impact of economic concepts in historical documents, including the United States Constitution;

(D) identify factors affecting profit, revenue, and expenses;

(E) determine factors affecting business risk;

(F) explain the concept of competition;

(G) describe market structures; and

(H) understand the rights and responsibilities of consumers within various economic systems.

(4) The student explains the impact of government on business activities within a free enterprise system. The student is expected to:

(A) determine the relationship between government and business;

(B) describe the nature of taxes;

(C) discuss the nature of monetary policy;

(D) discuss the supply and demand for money;

(E) explain the role of the Federal Reserve System;

(F) explain the concept of fiscal policies; and

(G) describe the effects of fiscal and monetary policies.

(5) The student discusses economic concepts impacting finance. The student is expected to:

(A) distinguish between economic goods and services;

(B) analyze the impact of technological innovations on the marketing and distribution of goods and services;

(C) explain the concept of economic resources;

(D) describe the concepts of economics and economic activities;

(E) determine economic utilities created by business activities;

(F) explain the relationship between supply and demand; and

(G) describe the functions of prices in markets.

(6) The student describes economic indicators impacting financial decision making. The student is expected to:

(A) describe the concept of price stability as an economic measure;

(B) discuss the measure of consumer spending as an economic indicator;

(C) discuss the impact of a nation's unemployment rates;

(D) explain the concept of Gross Domestic Product;

(E) describe the economic impact of inflation on business;

(F) explain unemployment and inflation tradeoffs;

(G) explain the economic impact of interest rate fluctuations; and

(H) determine the impact of business cycles on business activities.

(7) The student determines the impact of global/international trade on business decision making. The student is expected to:

(A) explain the nature of global trade;

(B) describe the determinants of exchange rates and their effects on the domestic economy;

(C) discuss the impact of cultural and social environments on global trade; and

(D) explain labor issues associated with global trade.

(8) The student employs sociological knowledge to facilitate finance activities. The student is expected to:

(A) analyze and interpret complex societal issues, events, and problems;

(B) analyze and evaluate the validity of information and statistics from primary and secondary sources for bias, propaganda, point of view, and frame of reference;

(C) reach reasoned conclusions;

(D) examine social beliefs, ethics, influences, and behavior;

(E) analyze group dynamics; and

(F) assess human behavior, including the impact of technological innovations or communication.

(9) The student applies psychological knowledge to facilitate finance activities. The student is expected to:

(A) recognize factors influencing perception;

(B) identify sources of attitude formation;

(C) assess methods used to evaluate attitudes;

(D) identify social and cultural strata;

(E) determine behavioral effects of social and cultural strata;

(F) analyze effects of others on individual behavior;

(G) predict likelihood of conformity and obedience;

(H) determine significance of aggression;

(I) recognize factors affecting personality;

(J) evaluate the nature of change over a lifetime;

(K) identify sources of stress;

(L) detail reactions to stress;

(M) employ strategies for dealing with stress;

(N) investigate factors affecting motivation;

(O) analyze cues to basic drives and motives; and

(P) analyze the development of motives.

(10) The student analyzes personal financial needs and goals based on current and projected economic factors. The student is expected to:

(A) explain the nature of financial needs, including college, retirement, wills, and insurance;

(B) set personal financial goals; and

(C) justify how those personal financial goals are realistic within the current and projected economy.

(11) The student manages personal finances 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) explain the nature of tax liabilities;

(D) interpret a pay stub;

(E) read and reconcile bank statements;

(F) maintain financial records;

(G) demonstrate the wise use of credit;

(H) validate a credit history;

(I) protect against identity theft; and

(J) prepare personal income tax forms, including the 1040E.

(12) The student describes the use of financial service providers. The student is expected to:

(A) describe types of financial service providers; and

(B) discuss considerations in selecting a financial service provider.

(13) The student compares and contrasts investment strategies. The student is expected to:

(A) explain types of investments and illustrate an example of the responsible purchase, use, or disposal of personal and business property;

(B) explain the nature of capital investment; and

(C) establish investment goals and objectives.

(14) The student identifies potential business threats and opportunities to protect a business's financial well-being. The student is expected to:

(A) describe the concept of insurance;

(B) simulate obtaining insurance coverage;

(C) simulate settling insurance losses;

(D) identify speculative business risks; and

(E) explain the nature of risk management.

(15) The student simulates the obtaining of business credit and controlling its use. The student is expected to:

(A) explain the purposes and importance of obtaining business credit;

(B) analyze critical banking relationships;

(C) make critical decisions regarding acceptance of bank cards;

(D) determine financing needed for business operations;

(E) identify risks associated with obtaining business credit;

(F) explain sources of financial assistance;

(G) explain loan evaluation criteria used by lending institutions; and

(H) simulate completing a loan application package.

(16) The student demonstrates an understanding of methods to manage financial resources to ensure solvency. The student is expected to:

(A) describe the nature of budgets;

(B) explain the nature of operating budgets;

(C) describe the nature of cost-benefit analysis;

(D) determine relationships among total revenue, marginal revenue, output, and profit;

(E) simulate developing a company department budget;

(F) forecast sales;

(G) calculate financial ratios;

(H) interpret financial statements;

(I) describe types of financial statement analysis, including ratio analysis and trend analysis; and

(J) identify problems within financial statements.

(17) The student understands the importance of financial markets in business. The student is expected to:

(A) describe the role of financial institutions; and

(B) explain types of financial markets, including money markets, securities markets, property market, and market for risk transfer.

(18) The student develops an understanding of the nature of asset values. The student is expected to:

(A) describe factors that affect the value of an asset, including cash flow, growth rate, timing, inflation interest rate, opportunity cost, risk, and required return; and

(B) read and interpret the value of an asset.

(19) The student uses sources of securities information to make informed financial decisions. The student is expected to:

(A) describe sources of securities information, charts, and graphs; and

(B) read and interpret securities tables.

(20) The student simulates using debt and equity capital to raise funds for business growth. The student is expected to:

(A) describe the financial needs of a business at different stages of development;

(B) discuss factors to consider in choosing between debt and equity capital; and

(C) explain the significance of capital structure.

§130.163. Banking and Financial Services (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Business, Marketing, and Finance.

(b) Introduction. Students develop knowledge and skills in the economical, financial, technological, international, social, and ethical aspects of banking to become competent consumers, employees, and entrepreneurs. Students 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.

(c) 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 United States 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, and financial services 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 Export-Import Bank of the United States and 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 decision and enhance future business opportunities in banking services. The student is expected to:

(A) describe the importance of selling in the banking industry;

(B) demonstrate cross-selling bank products and services;

(C) demonstrate the relationship-selling process;

(D) explain the process of opening a new account;

(E) conduct mock calls on small business clients;

(F) interpret loan terms for a client;

(G) describe the nature of event-based selling; and

(H) plan a sales campaign.

(5) The student monitors, plans, and controls the day-to-day activities within a banking organization in order to ensure secure operations. The student is expected to:

(A) describe how bank security programs minimize the chance for loss, including procedures for the secure handling of cash and checks; detecting and reporting counterfeit currency; implementing bank security programs and 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) perform 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) underwrite loan applications to determine credit worthiness of customers, including the loan application generating process, credit analysis, and factors affecting loan pricing and structuring;

(E) discuss real estate lending and servicing, including the involvement of financial institutions in the real estate industry and functions and responsibilities of the loan servicing departments; and

(F) 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) develop a compliance program to protect the company well-being;

(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;

(F) discuss the responsibilities of regulatory agencies that oversee the banking industry;

(G) describe the process for implementing regulatory changes; and

(H) describe provisions of bankruptcy law.

(7) The student creates and maintains positive, ongoing relationships with banking customers in order to enhance the organization's image. The student is expected to:

(A) foster positive relationships with customers to enhance company image;

(B) discuss the importance of meeting and exceeding customer expectations;

(C) describe the relationships that institutions providing banking services have with their communities; and

(D) manage a profitable investment portfolio to build customer relationships, including selection of customers for portfolios using established criteria that support the institution's business goals.

(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 banks 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 terms in banking, banking calculations such as interest and annual percentage rate, capital adequacy, asset quality, management administration, earnings, liquidity, and sensitivity to market risk.

(9) The student uses tools, strategies, and systems to operate banking equipment. The student is expected to:

(A) use banking technology to increase workplace efficiency and effectiveness such as fill and empty automatic teller machines and process numeric data; and

(B) discuss the impact of technology on the banking industry.

*§130.164. Securities and Investments (One-Half to One Credit).*

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Business, Marketing, and Finance.

(b) Introduction. Students will describe and abide by laws and regulations in order to manage business operations and transactions in the securities industry; access, process, maintain, evaluate, and disseminate information to assist in making decisions common to the securities industry; and monitor, plan, and control day-to-day securities organization activities to ensure continued business functioning. Students will use career planning concepts, tools, and strategies to explore, obtain, and develop a career in the securities industry. Students will determine client needs and wants and respond through planned, personalized communication to influence purchase decisions and enhance future securities sales opportunities.

(c) Knowledge and skills.

(1) The student describes and abides by laws and regulations in order to manage 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:

(i) legal and ethical considerations in buying and selling securities;

(ii) state regulation of the securities and investments industry;

(iii) the role of the National Association of Securities Dealers in the regulation of securities and investments;

(iv) regulation of extensions of credit in the securities industry;

(v) the nature of the Securities Investor Protection Corporation;

(vi) taxation issues that impact securities and investments; and

(vii) the nature of the Chartered Financial Analysts Institute Code of Ethics and Professional Conduct;

(B) describe fundamental concepts of real estate law, including:

(i) state licensure laws for the real estate industry;

(ii) laws pertaining to the conveyance of real estate;

(iii) the impact of local zoning regulations on the real estate industry; and

(iv) the nature of a real estate sales contract; and

(C) explain the nature and scope of real estate titling, including:

(i) methods of transferring real estate titles;

(ii) reasons for title work;

(iii) the nature of title insurance; and

(iv) types of real estate property titling such as sole ownership, joint tenancy with right of survivorship, and tenancy in common.

(2) The student maintains, monitors, controls and plans the use of financial resources in order to perform key duties in the securities and investments industry. 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) express the nature of diversification strategies;

(D) understand factors to consider when selecting investments;

(E) relate information that can be obtained from financial statements and annual reports;

(F) communicate the nature of a mutual fund prospectus;

(G) describe fundamental analysis used in making investment decisions;

(H) relate the nature of technical analysis;

(I) verbalize strategies for selecting investments;

(J) identify performance measurements for venture capital; and

(K) describe investment analysis and selection theory, including the Modern Portfolio Theory, Capital Asset Pricing Model, and the Arbitrage Pricing Theory.

(3) The student select investments for clients. The student is expected to:

(A) interpret financial ratios significant to investors;

(B) calculate stock-related values such as the value of a constant growth stock, the expected value of future dividends, and 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) assess securities' fundamentals;

(E) select investments based on fundamental analysis;

(F) appraise property to determine its value;

(G) understand the real estate valuation process;

(H) conduct a real estate appraisal;

(I) create a written real estate appraisal report using standard writing conventions; and

(J) appraise investment property.

(4) The student monitors, plans, and controls day-to-day securities and investments operations to ensure continued business functioning. The student is expected to:

(A) implement securities and investments operations activities;

(B) discuss the functions of operations in departments' securities and investments;

(C) perform the buy and sell functions of a brokerage clerk;

(D) post transaction data to accounting ledgers and certificate records;

(E) schedule the delivery of customer securities; and

(F) calculate commissions.

(5) The student uses career planning concepts, tools, and strategies to explore, obtain, and develop a securities and investments career. The student is expected to describe careers in securities and investments.

(6) The student explores securities and investments 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;

(C) explain professional designations in the securities and investments industry such as Certified Fund Specialist, Chartered Financial Analyst, Board Certified in Asset Allocation, Board Certified in Securities, Certified Senior Consultant, and Certified Financial Planner;

(D) demonstrate an understanding of:

(i) the environments in which securities and investments services are offered, including securities sales agents, securities and investment firms, and securities markets;

(ii) causes of stock price fluctuations;

(iii) the relationship between bond prices and yields;

(iv) the role of investment banking in the primary marketplace; and

(v) the nature of margin accounts, short sales, market timing, and international strategies;

(E) describe the roles, responsibilities, and education requirements for careers in the real estate industry, including real estate sales agents, real estate appraisers, title company personnel, real estate entrepreneurs, and property managers;

(F) describe real estate sales functions such as listing of property, methods of advertising, showing property, and closing and settlement; and

(G) assist property owners in the sale of their real estate, including determining a list price, showing instructions, goals of holding an open house, and scheduling a tour or showing exclusively for real estate agents.

(7) The student determines client needs and wants and responds through planned, personalized communication to influence purchase decisions and enhance future securities and investments opportunities. The student is expected to explain securities and investments products and their benefits, including the nature of stocks, dividends, stock splits, options strategies, hedge funds, futures, bonds, mutual

funds, venture capital, real estate and retirement investment plans, and education savings plans and the rights of stockholders and mutual fund shareholders.

(8) The student describes a complete securities and investments sale. The student is expected to:

(A) conduct lectures, seminars, and forums to attract potential clients;

(B) schedule appointments with prospective clients;

(C) conduct mock client interviews;

(D) gather information on the client's finances and investment goals;

(E) organize information on the client's finances and investment goals;

(F) synthesize information on the client's finances and investment goals;

(G) use statistical and probabilistic skills for planning, investigating, collecting, analyzing, and interpreting data;

(H) determine investment strategies for meeting the client's investment goals;

(I) develop a written investment recommendation for the client using standard writing conventions;

(J) design and present sales presentation materials;

(K) present written investment recommendation to the client using standard writing conventions;

(L) convert objections into selling points;

(M) close the securities and investment sale;

(N) complete the order ticket according to the client's instructions;

(O) enter the order;

(P) follow up on the completion of the transaction; and

(Q) monitor the client's portfolio.

§130.165. Insurance Operations (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Business, Marketing, and Finance.

(b) Introduction. Students will describe and abide by laws and regulations in order to manage business operations and transactions in the insurance industry; access, process, maintain, evaluate, and disseminate information to assist in making decisions common to the insurance industry; and monitor, plan, and control day-to-day insurance organization activities to ensure continued business functioning. Students will use career planning concepts, tools, and strategies to explore, obtain, and develop a career in insurance. Students will employ underwriting techniques and strategies to gather, access, and evaluate the risk posed by potential insurance clients. Students will determine client needs and wants and respond through planned, personalized communication to influence purchase decisions and enhance future insurance business opportunities.

(c) Knowledge and skills.

(1) The student communicates an appreciation of the insurance industry and its role in society. The student is expected to:

(A) describe the nature of the insurance industry, including liability insurance and automobile insurance coverage;

(B) discuss components of homeowners' insurance;

(C) explain components of flood and earthquake insurance;

(D) identify components of commercial property insurance;

(E) explain the nature of commercial liability insurance;

(F) describe the nature of title insurance;

(G) define the nature of health insurance and long-term care insurance;

(H) compare and contrast the nature of Medicare and Medicaid;

(I) discuss the nature of unemployment insurance;

(J) identify the nature of worker's compensation insurance;

(K) describe the nature of disability insurance;

(L) explain the nature of life insurance;

(M) summarize the role of life insurance in investment and estate planning;

(N) discuss the manner in which insurance companies generate income;

(O) explain the use of state risk pool programs; and

(P) discuss trends in the insurance industry such as hacker insurance and identity theft insurance.

(2) The student describes careers in insurance. The student is expected to:

(A) explore education, licensing, and certification requirements; and

(B) discuss the role and responsibilities of an underwriter, insurance sales representative, actuary, claims personnel, and a loss control specialist.

(3) The student defines regulations that ensure compliance adherence to insurance industry regulations. The student is expected to:

(A) communicate the ethical and social responsibilities in the field of insurance;

(B) discuss federal and state regulations governing the insurance industry;

(C) explain the significance of the Consolidated Omnibus Budget Reconciliation Act; and

(D) discuss Title I of the Health Insurance Portability and Accountability Act.

(4) The student explains legal concepts pertinent to the insurance industry. The student is expected to:

(A) discuss fundamental legal principles that pertain to insurance such as indemnity, insurable interest, subrogation, and utmost good faith; and

(B) describe the nature of insurance contracts.

(5) The student analyzes the risk posed by potential clients in order to make insurance approval and denial decisions. The student is expected to:

(A) explain the importance of actuarial science in the insurance industry;

and (B) discuss the nature of credit-based insurance scores;

(C) underwrite an insurance policy.

(6) The student uses information technology tools when underwriting an insurance policy. The student is expected to:

(A) simulate computer smart systems and applications to assist in the underwriting process; and

(B) use the Internet to determine a potential client's risk.

(7) The student acquires necessary information and uses investigative techniques to identify and investigate insurance fraud. The student is expected to:

(A) conduct a database search to obtain background information on claimants and witnesses;

(B) discuss the nature of insurance fraud;

(C) investigate suspected insurance fraud;

(D) conduct surveillance work; and

(E) identify and research a case study involving possible insurance fraud, including:

(i) formulating questions to analyze the issue;

(ii) gathering relevant sources;

(iii) evaluating the validity and reliability of those sources;

(iv) determining and verbalizing applicable laws and regulations;

(v) gathering data supporting evidence; and

(vi) creating a clear and coherent oral and written presentation, including the use of correct grammar, spelling, punctuation, and citation of resource materials.

(8) The student manages agency and company policies to protect the insurance company's financial well-being. The student is expected to:

(A) notify clients in writing when policy is cancelled using writing conventions appropriate to this purpose; and

(B) monitor agency accounts.

(9) The student gathers, organizes, and synthesizes information to process a claim to fulfill and communicate the company's legal obligation to the client. The student is expected to:

(A) discuss the nature of insurance claims;

(B) process an insurance claim;

(C) interview claimant and witnesses;

(D) inspect property damage;

(E) compile a claim report;

(F) negotiate with claimant; and

(G) settle the insurance claim.

(10) The student evaluates existing client insurance and risk-management needs. The student is expected to:

(A) evaluate a client's insurance needs; and

(B) recommend coverage upgrades to clients, where appropriate.

(11) The student simulates an insurance sale. The student is expected to:

(A) identify prospective clients;

(B) schedule appointments with prospective clients;

(C) interview a client;

(D) determine the client's insurance needs;

(E) prepare sales presentation materials;

(F) present an insurance recommendation to the client;

(G) close the insurance sale;

(H) handle any objections; and

(I) process the insurance documentation.

§130.166. Accounting I (One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Business, Marketing, and Finance.

(b) Introduction. Students 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 reflect on this knowledge as they engage in the process of recording, classifying, summarizing, analyzing, and communicating accounting information. Students formulate and interpret financial information for use in management decision making.

(c) Knowledge and skills.

(1) The student communicates an understanding of the accounting industry. The student is expected to:

(A) describe the purpose of accounting and financial reporting; and

(B) discuss its impact on industry.

(2) The student uses career planning concepts, tools, and strategies to explore accounting careers. The student is expected to:

(A) describe Generally Accepted Accounting Principles such as the purpose and use;

(B) discuss the significance of responsibility in accounting such as ethical and social responsibility and careers in accounting;

(C) 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

(D) 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 systems in real-world situations to maintain, monitor, control, and plan the use of financial resources. The student will communicate how accounting procedures affect financial statements. The student is expected to:

(A) classify, record, and summarize financial data;

(B) discuss the accounting cycle;

(C) demonstrate the effects of transactions on the accounting equation;

- (D) prepare a chart of accounts;
- (E) use T accounts;
- (F) record transactions in a general journal;
- (G) post journal entries to general ledger accounts;
- (H) prepare a trial balance;
- (I) journalize and post adjusting and closing entries;
- (J) prepare a post-closing trial balance;
- (K) prepare work sheets;
- (L) discuss the nature of annual reports;
- (M) discuss the use of financial ratios in accounting;
- (N) determine business liquidity;
- (O) calculate business profitability;
- (P) prepare income statements;
- (Q) prepare a statement of equity and retained earnings;

and

(R) prepare balance sheets.

(4) The student maintains cash controls. The student is expected to:

(A) explain cash control procedures such as signature cards, deposit slips, internal and external controls, and cash clearing;

(B) prove cash;

(C) journalize and post entries to establish and replenish petty cash;

(D) journalize and post entries related to banking activities;

(E) explain the benefits of electronic funds transfer; and

(F) prepare bank deposits, purchase requisitions, purchase orders, sales slips, and invoices.

(5) The student performs accounting functions specific 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 and accounts payable;

and

(E) prepare an accounts payable schedule.

(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, invoices, returns, and allowances;

(F) process customer payments;

(G) process uncollectible accounts;

(H) prepare an accounts receivable schedule; and

(I) determine uncollectible accounts receivable.

(8) The student maintains inventory records to track the location, quantity, and value of current assets. The student is expected to:

(A) record inventory usage;

(B) process invoice of inventory;

(C) process results of inventory and adjustments; and

(D) determine the cost of inventory.

(9) The student completes payroll procedures to calculate, record, and distribute payroll earnings. The student is expected to:

(A) interpret time cards to calculate hours worked;

(B) maintain employee earnings records;

(C) calculate employee earnings such as gross earnings and net pay;

(D) calculate employee-paid withholdings;

(E) prepare a payroll register;

(F) record the payroll in the general journal;

(G) complete payroll tax expense forms; and

(H) prepare federal, state, and local payroll tax reports.

(10) The student performs specialized accounting procedures to track cash flow. The student is expected to:

(A) process notes payable and receivable;

(B) determine the book value of a plant asset;

(C) prepare depreciation schedules;

(D) record the disposition of assets;

(E) account for intangible assets; and

(F) analyze accounting records to make business decisions.

(11) The student performs specialized accounting functions to a corporation. The student is expected to:

(A) discuss the nature of a consolidated financial statement;

(B) communicate methods to account for the issuance of stock;

(C) analyze the articles of incorporation needed to start a corporation;

(D) compute the number of shares of common stock to be issued on the conversion of convertible preferred stock;

(E) compute dividends payable on stock;

(F) prepare a balance sheet for a corporation;

(G) complete a work sheet for a corporation;

(H) prepare an income statement for a corporation;



(I) prepare a statement of equity and retained earnings for a corporation;

(J) understand that internal accounting controls exist to ensure the proper recording of financial transactions; and

(K) identify and perform tax accounting functions such as recordkeeping procedures and the nature of corporate tax accounting.

(12) The student describes and abides by laws and regulations in order to manage business operations and transactions in accounting. The student is expected to:

(A) describe regulation of accounting, including:

(i) 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;

(ii) describe the impact of the Sarbanes-Oxley Act of 2002 on internal controls and financial reporting;

(iii) describe the role of the Securities and Exchange Commission in regulating the accounting industry; and

(iv) discuss state regulation of the accounting industry; and

(B) 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) formulate questions to analyze the issue;

(ii) gather relevant sources;

(iii) evaluate the validity and reliability of those sources; and

(iv) determine and verbalize which laws and regulations apply.

(13) 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; and

(B) create a clear and coherent oral presentation that includes the use of correct grammar, spelling, punctuation, and citation of resource materials.

§130.167. Accounting II (One Credit).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Accounting I.

(b) Introduction. Students 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 reflect on this knowledge as they engage in various managerial and cost accounting activities. Students formulate and interpret financial information for use in management decision making.

(c) Knowledge and skills.

(1) The student uses equations, graphical representations, accounting tools, strategies, and systems in real-world situations to maintain, monitor, control, and plan the use of financial resources. The student is expected to communicate how accounting procedures affect financial statements.

(2) The student performs accounting functions specific to a corporation. The student is expected to:

(A) discuss the nature of a consolidated financial statement;

(B) communicate methods to account for the issuance of stock;

(C) analyze the articles of incorporation needed to start a corporation;

(D) compute the number of shares of common stock to be issued on the conversion of convertible preferred stock;

(E) compute dividends payable on stock;

(F) understand that internal accounting controls exist to ensure the proper recording of financial transactions;

(G) complete a work sheet for a corporation;

(H) generate an income statement for a corporation;

(I) develop a statement of equity for a corporation;

(J) produce a balance sheet for a corporation;

(K) formulate a cash flow statement; and

(L) perform accounting functions specific to corporate tax accounting, including discussing the nature of corporate tax accounting and applying record-keeping procedures for corporate tax accounting.

(3) The student applies related accounting procedures to the purchase and sale of bonds.

(4) 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;

(C) determine business liquidity; and

(D) calculate business profitability.

(5) The student describes and employs fundamental managerial accounting concepts. The student is expected to:

(A) explain the nature of managerial cost accounting such as activities, costs, and cost drivers;

(B) conduct cost-volume-profit analysis;

(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) illustrate the nature of cost accounting decision making;

(H) discuss the nature of cost accounting budgets;

(I) explain the use of variance analysis for cost accounting;

(J) discuss the nature of cost allocation;

(K) develop standard variable costs for a product;

(L) calculate variances;

- (M) conduct variance analysis;
- (N) perform cost allocation functions; and
- (O) prepare cost of production reports.

(6) The student prepares budget reports to make business decisions. The student is expected to:

- (A) process preliminary budget detail;
- (B) prepare budget reports; and
- (C) determine relevant cost and revenue data for decision-making purposes.

(7) The student describes and abides by 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; and
  - (iii) the state regulation of the accounting industry;

and  
(B) identify and research a case study involving a currently unresolved fraud, compliance, or regulatory issue or possible scenario, including:

- (i) formulate questions to analyze the issue;
- (ii) gather relevant sources;
- (iii) evaluate the validity and reliability of those sources;
- (iv) determine and verbalize which laws and regulations apply;
- (v) gather data supporting evidence of fraud or non-compliance with regulations; and

(vi) create a clear and coherent presentation, including the use of correct grammar, spelling, punctuation, and citation of resource materials.

(8) The student accesses, processes, maintains, and evaluates, and disseminates financial information to assist business decision making. The student is expected to:

- (A) discuss using accounting technology such as the use of data mining and integrating technology 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.

§130.168. Financial Analysis (One Credit).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Accounting I.

(b) Introduction. Students apply technical skills to develop knowledge and skills in the economical, financial, technological, international, social, and ethical aspects of business to become competent consumers, employees, and entrepreneurs. Students develop analytical skills by actively evaluating financial results of multiple businesses, interpreting results for stakeholders, and presenting strategic recommendations for performance improvement.

(c) 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) implement accounting procedures for tracking money flow and determining financial status through the preparation of financial statements.

(2) The student describes 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 to pursue the full range of postsecondary education and career opportunities. The student is expected to:

- (A) demonstrate knowledge of arithmetic operation such as addition, subtraction, multiplication, and division;
- (B) demonstrate use of relational expressions such as equal to, not equal to, greater than, less than;
- (C) apply data and measurements to solve a problem;
- (D) analyze mathematical problem statements for missing and irrelevant data;
- (E) construct charts, tables, and graphs from functions and data; and
- (F) analyze data when interpreting operational documents.

(4) The student manages financial resources to ensure solvency. The student is expected to:

- (A) describe the nature of budgets;
- (B) explain the nature of operating budgets;
- (C) determine relationships among total revenue, marginal revenue, output, and profit;
- (D) calculate financial ratios;
- (E) interpret financial statements;
- (F) describe types of financial statement analyses such as ratio analysis and trend analysis; and
- (G) 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; and
- (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, investment valuation, and discuss the use of benchmarks when 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) analyze a company financial situation;
- (E) understand and interpret financial statement notes;

and

(F) evaluate results from aspect of management, creditors, and investors.

(7) 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 problem to develop creative solutions;

(C) create and evaluate ideas, proposals, and solutions to problems;

(D) generate new and creative ideas to solve problems by brainstorming possible solutions;

(E) critically analyze information to determine value to the problem-solving task;

(F) guide individuals through the process of recognizing concerns and making informed decisions; and

(G) identify and evaluate alternatives using a variety of problem-solving and critical-thinking skills.

§130.169. Statistics and Risk Management (One Credit).

(a) General requirements. This course is recommended for students in Grades 11-12. This course may meet the requirements for the fourth mathematics credit. Recommended prerequisites: Accounting I and Algebra II.

(b) Introduction. Students will use a variety of graphical and numerical techniques to analyze patterns and departures from patterns to identify and manage risk that could impact an organization. Students will use probability as a tool for anticipating and forecasting data within business models to make decisions. Students will determine the appropriateness of methods used to collect data to ensure conclusions are valid.

(c) Knowledge and skills.

(1) 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 nature 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, including financial planner, financial manager, financial analyst, controller, risk manager, cash manager, treasurer, and chief financial officer.

(2) The student plans, monitors, and controls day-to-day activities to enable continued functioning in finance. The student is expected to:

(A) analyze the operations role and function in finance such as:

- (i) explain the nature of operations;

(ii) discuss the role of ethics in operations; and

(iii) describe use of technology in operations;

(B) implement purchasing activities in finance such as:

(i) explain the nature and scope of purchasing;

(ii) place orders or reorders;

(iii) maintain inventory of supplies;

(iv) manage the bid process in purchasing;

(v) select vendors; and

(vi) evaluate vendor's performance;

(C) describe and explain the production role and function, including the concept of production and production activities; and

(D) identify and implement quality-control processes in finance, including:

(i) quality-control measures;

(ii) quality-control methods at work;

(iii) crucial elements of a quality culture;

(iv) the role of management in achievement of quality; and

(v) efficient operating systems.

(3) The student analyzes accounting systems to examine fiscal stability of businesses. The student is expected to:

(A) describe the nature and scope of accounting; and

(B) implement accounting procedures for tracking money flow and determining financial status such as the nature of cash flow statements, balance sheets, and income statements.

(4) 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) calculating the net present value;

(v) explaining the relationship between the internal rate of return and net present value;

(vi) calculating the net present value; and

(vii) 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:

(i) formulating the use of pro forma statements in profit planning;

(ii) developing a pro forma income statement; and

(iii) preparing a pro forma balance sheet;

(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, but not limited to:

(i) analyzing 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; and

(vi) calculating the cost of preferred stock and common stock;

(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.

(5) The student employs risk-management strategies and techniques in corporate finance to minimize business loss. The student is expected to:

(A) manage risk to protect business stability, including:

(i) analyzing the relationship between risk management and business finance;

(ii) discussing the nature of risk measurement;

(iii) measuring risk;

(iv) explaining the nature of interest rate risk;

(v) managing interest rate risk;

(vi) explaining approaches to financial risk management;

(vii) discussing the use of derivatives in financial risk management;

(viii) evaluating the risks of derivatives;

(ix) explaining reasons to integrate risk management into business operations;

(x) identifying business risks; and

(xi) integrating risk management into business operations; and

(B) explain enterprise risk management, including:

(i) analyzing the nature of enterprise risk management; and

(ii) using accounting tools, strategies, and systems to maintain, monitor, control, and plan the use of financial resources.

(6) The student accesses, processes, maintains, evaluates, and disseminates financial information to assist business decision making. 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 media, work, and educational environments;

(C) generate a spreadsheet to collect, collate, organize, and analyze quantitative data;

(D) use spreadsheets and graphical techniques to present data in a manner that is understood by and meaningful to colleagues and clients;

(E) analyze data presented in frequency distributions, histograms, and forgiveness;

(F) construct and use descriptive indices;

(G) apply the common rules of probability to evaluate business alternatives;

(H) construct and interpret a confidence interval estimate for a single population mean using standard normal distribution;

(I) establish and interpret a confidence interval estimate for a single population proportion;

(J) carry out an appropriate hypothesis test on a single population mean or proportion;

(K) interpret the p-value of the test statistic;

(L) construct a contingency table and perform a chi-squared test of independence;

(M) analyze two variable problems using linear regression and correlation; and

(N) interpret the results of a computer-generated regression model.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Director, Policy Coordination

Texas Education Agency

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For further information, please call: (512) 475-1497



## SUBCHAPTER G. GOVERNMENT AND PUBLIC ADMINISTRATION

### 19 TAC §§130.181 - 130.190

The State Board of Education (SBOE) proposes new §§130.181-130.190, concerning the Texas essential knowledge and skills (TEKS) for government and public administration. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future

meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701,

(512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.181. Implementation of Texas Essential Knowledge and Skills for Government and Public Administration.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.182. Principles of Government and Public Administration (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-11.

(b) Introduction. Government and Public Administration introduces students to foundations of governmental functions and career opportunities within the United States. Students will examine governmental documents such as the United States Constitution and the Bill of Rights.

(c) 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 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 United States Constitution;

(B) explain the importance of a written constitution and how the federal government serves the purposes set forth in the Preamble to the United States Constitution;

(C) explore how the Federalist Papers explain the principles of the American 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 constitutional processes by which the United States Constitution can be amended;

(F) 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;

(G) evaluate the limits on the national and state governments in the United States federal system of government;

(H) categorize government powers as national, state, or shared government;

(I) analyze historical conflicts over the respective roles of national and state governments in the United States; and

(J) identify significant individuals and their careers in the field of government and politics.

(3) The student compares the similarities and differences that exist among the United States system of government and other political systems. The student is expected to:

(A) compare the United States system of government with other political systems;

(B) contrast advantages and disadvantages of federal, confederate, and unitary systems of government;

(C) analyze advantages and disadvantages of presidential and parliamentary systems of government; and

(D) identify the responsibilities of ambassadors as they relate to the country where they serve.

(4) The student explores rights guaranteed by the United States 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) recognize issues addressed in selected critical cases that involve Supreme Court interpretations of rights guaranteed by the United States Constitution;

(D) define the role 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;

(F) recognize the impact of the Incorporation Doctrine involving due process and the Bill of Rights on individual rights, federalism, and majority rule; and

(G) describe the role of immigration personnel as they provide services to immigrants.

(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;

(B) evaluate when the obligation of citizenship requires that personal desires and interests be subordinated to the public good;

(C) evaluate when the rights of individuals are inviolable even against claims for the public good;

(D) analyze the consequences of political decisions and actions on society; and

(E) investigate the role of municipal management in serving public and personal good.

(6) The student recognizes the importance of voluntary individual participation in the United States democratic society. The student is expected to:

(A) measure the effectiveness of participation in the political process at local, state, and national levels;

(B) review historical and contemporary examples of citizen movements to bring about political change or to maintain continuity;

(C) evaluate different leadership styles and their impact on participation;

(D) state the factors that influence an individual's political attitudes and actions;

(E) compare effectiveness of leadership characteristics of state and national leaders; and

(F) define the importance of volunteer public service as a way to bring about political change and maintain 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) describe 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;

(B) review maps to locate places and regions;

(C) interpret geographical influences on requirements for international, national, state, and local governments;

(D) predict how geographical considerations impact regional change over time;

(E) interpret the importance of cultural symbols in the planning of government activities;

(F) explore how Geographic Information Systems assist in gathering information; and

(G) connect a positive or negative effect of a government policy to the physical and human characteristics of a place or region.

(9) The student will interpret and apply 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 United States Constitution contribute to our national identity;

(E) evaluate the alignment of institutions of government and public administration with the principles of United States and international law to guide policy development; and

(F) analyze United States foreign policy to determine its affect on other countries.

(10) The student will select an appropriate method of communication to 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 United States 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 the structure and functions of the Texas state government to the federal system;

(H) analyze the structure and functions of local government;

(I) accurately document, report, and record information to conform to legal requirements;

(J) research safety standards and practices ensuring public safety and environmental protection;

(K) comply with directives to ensure protection of confidential information while carrying out duties as a government or public administration employee;

(L) exercise ethical conduct to comply with all laws and regulations affecting governmental agencies; and

(M) apply 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 United States 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) understand the concept of intellectual property.

§130.183. Political Science I (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Government and Public Administration.

(b) Introduction. This course will familiarize the student with political theory through the study of governments; public policies; and political processes, systems, and behavior.

(c) Knowledge and skills.

(1) The student analyzes classic and 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 behavioralism, postbehavioralism, systems theory, modernization theory, structural-functionalism, developmentalism, rational-choice theory, and new institutionalism;

(D) compare the evolution of classic and contemporary theories; and

(E) predict 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 as to the origination 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;

(C) predict what national or global trends could stimulate the formation of a new ideology; and

(D) synthesize and discuss an original political 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 those with recent current events; and

(B) complete a project or presentation about the political culture of a researched country.

(5) The student identifies the roles played by local, state, and national governments in public and private sectors of the United States 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 United States government and analyze their impact on the United States economy;

(C) identify the sources of expenditures of the United States government and analyze their impact on the United States economy;

(D) compare the role of government in the United States free enterprise system and other economic systems;

(E) explain the effects of international trade on United States economic and political policies; and

(F) summarize the government's role in setting international trade 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) analyze how public opinion is measured;

(D) critique the reliability of those measurements; and

(E) predict 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:

(A) classify interest groups such as public interest research groups, lobbies, and political action committees; and

(B) compare 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 on a campaign;
- (E) compare the effectiveness of telephone, television, print media, focus groups, and online resources on elections; and
- (F) design a mock campaign.

(9) The student explores the processes for filling public offices in the United States system of government. The student is expected to:

- (A) compare 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 United States system of government. The student is expected to:

- (A) discuss the functions of the two-party system;
- (B) evaluate 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) interpret statistical data such as in political science journals, public opinion polls, and surveys.

§130.184. Political Science II (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Principles of Government and Public Administration and Political Science I.

(b) Introduction. This course uses a variety of methodological approaches to examine the process, systems, and political dynamics of the United States and other nations. The dynamic component of this course includes current United States and world events.

(c) 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 are improvements;
  - (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 (political scientists), displacement and concentration hypothesis (economists), and technological complexity (futurists);

(F) examine organizational theory models;

(G) recognize that public management involves evaluation of productivity, budgets, and human resources;

(H) argue for or against privatization of government services and functions in terms of efficiency, policy, and corruption; and

(I) research and cite 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 and defend a 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) defend the nature of foreign policy by examining the behavior of nation-states;

(E) compare types of foreign policy decisions, including micro-, macro-, and crisis-decisions;

(F) examine the rational actor model;

(G) analyze what a nation-state does when faced with a problem that requires resolution;

(H) make observations about ethics in foreign policy; and

(I) 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) connect the ancient practice of sending emissaries to current embassy activities;

(B) identify embassy and ambassador roles in international relations;

(C) distinguish between types of diplomacy such as public versus secret diplomacy, multilateral versus bilateral, and tacit versus formal;

(D) use concepts of bargaining and game theory to solve problems;

(E) recognize that nation-states resort 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 the prominent international governmental organizations and non-governmental organizations;

(B) explore the functional scope of international governmental organizations and non-governmental organizations in global problem solving; and

(C) conduct a project that proposes a solution for an international relations problem such as arms control, terrorism, commerce, currency, natural resource management, food, and 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) use communication techniques to stimulate the exchange of ideas and develop international, national, state, and local networks to accomplish the governmental goals;

(D) interpret impact of international, national, state, or local politics on the goals of governmental or public administrative agencies; and

(E) delineate intergovernmental and private contractor relationships ensuring governmental actions are free from conflict of interest.

§130.185. Revenue, Taxation, and Regulation (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Government and Public Administration.

(b) Introduction. Revenue, Taxation, and Regulation is an overview of law and investigative principles and follows agency procedures to examine evidence and ensure revenue compliance. In addition, students learn to facilitate clear and positive communication with taxpayers and become familiar with data analysis systems and revenue-related financial problems. The student prepares to enforce legal compliance and regulatory standards.

(c) Knowledge and skills.

(1) The student explores the investigation and evidence collection process in mock situations. The student is expected to:

(A) investigate potential violators by exploring leads and conducting client interviews;

(B) use persuasive techniques to gain cooperation such as subpoenas and other ethically and legally acceptable means;

(C) distinguish 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) accurately organize facts objectively, logically, and concisely;

(G) analyze prohibited matters and guides concerning 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) synthesize ways to coordinate work and organize information with others performing similar tasks;

(C) prepare public information to minimize controversy;

(D) recognize that problems often 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) role play presenting 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) recognize noncompliant practices;

(C) recommend application of administrative and judicial remedies; and

(D) produce 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.

§130.186. Public Management and Administration (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Government and Public Administration.

(b) Introduction. Public Management and Administration considers that governments and nonprofit administration resemble private-sector management. Students are introduced to management tools that maximize the effectiveness of administrators and affect the quality of life of citizens in the community.

(c) Knowledge and skills.

(1) The student analyzes management theories. The student is expected to:

(A) explain various management theories such as Theory X, Theory Y, and Theory Z and how they are effective; and

(B) compare management of government and nonprofit agencies to management in the private sector.

(2) The student aligns 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) recruit a diverse workforce in an equitable manner;

(D) seek a variety of input from all stakeholders;

(E) apply people skills to grasp opportunities and manage conflicts in a positive and constructive manner;

(F) emphasize the need to infuse understanding of vision, missions, and goals into all departmental activities;

(G) evaluate employees' ability to adapt behavior and work methods in response to new information, changing conditions, or unexpected obstacles;

(H) delegate responsibility of power and authority;

(I) analyze the concept of risk management;

(J) legally publicize all meetings at which budget and allocation decisions are to be discussed; and

(K) obtain outside expertise as needed.

(3) The student facilitates 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) overcome reluctance of employees to share work product and intellectual property;

(B) restate complex technical information or issues into language the general public can understand;

(C) implement verbal skills effectively to explain, justify, or discuss public issues;

(D) present techniques effectively to handle difficult interviews and situations; and

(E) afford the public equal opportunity of access to all open records.

(4) The student uses agency expertise to help elected officials and others identify, implement, and achieve common goals and objectives. The student is expected to:

(A) obtain relevant data 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 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;

(D) prepare and administer budgets;

(E) operate accounting systems in compliance with standards for government agency accounting; and

(F) disburse monies, prepare financial reports, and arrange for audits.

(6) The student develops and manages plans and systems to meet agency needs without wasting funds or engaging in unethical behavior. The student is expected to:

(A) assist departmental staff to fulfill procurement requirements;

(B) develop event schedules for the public announcement of procurement requirements;

(C) allocate resources to fulfill plans and meet customer requirements;

(D) recommend process changes to improve vendor reliability and performance;

(E) supervise the preparation and preservation of reports and other procurement documents required by law or policy or desired by management;

(F) determine means of public announcements to elicit vendor interest and bids from qualified sources;

(G) identify and assist sources that match approved vendor criteria;

(H) manage an evaluation process to ensure each bid, proposal, or offer is evaluated completely in terms of all relevant and ethical criteria;

(I) safeguard proprietary information of bidders;

(J) safeguard rights of the procuring entity; and

(K) determine the need for outside consultation.

(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; 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) explain policy background and rationale to persons denied access to certain public information;

(C) establish reliable controls to prevent unauthorized access to or release of privileged information; and

(D) maintain integrity of secure records environment.

§130.187. Planning and Governance (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Government and Public Administration.

(b) Introduction. Planning and Governance provides the opportunity for students to formulate plans and policies to meet social, economic, and physical needs of communities.

(c) 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 on present and future needs;

(C) assess legal aspects of regulatory compliance in planning;

(D) evaluate the drafting, analysis, and refinement of regulations and procedures;

(E) prepare special planning studies;

(F) perform mapping and graphic functions;

(G) predict the interaction between economy, transportation, health and human services, and land regulation and make recommendations for the future; and

(H) make observations about local, state, and federal programs in order to provide future planning recommendations.

(2) The student develops comprehensive 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 issues;

(B) identify barriers to plan implementation;

(C) perform problem-solving techniques to overcome barriers to plan implementation; and

(D) evaluate strategies for achieving goals.

(3) The student creates a coherent plan for project management. The student is expected to:

(A) secure approval of integrated plans;

(B) monitor plan progress;

(C) monitor plan budgets;

(D) respond to citizen and official requests for information;

(E) demonstrate effective, cogent presentation skills at public meetings; and

(F) maintain professionalism in challenging 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;

(B) organize, structure, and conduct interviews with experts;

(C) compile original data and reliable source information into an objective database; and

(D) apply systematic thinking to identify and contain the scope of the issue or problem at hand.

(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, philosophical, and other perspectives;

(C) critique facts and statistical claims for accuracy and relevance;

(D) ensure materials meet ethical standards; and

(E) omit irrelevant, distracting, or digressive material.

(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) assess tolerance of individuals and groups for consideration of compromise;

(C) employ mediation techniques;

(D) suggest alternative proposals that keep discussion from collapsing; and

(E) maximize openness of 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;

(C) employ kinesthetic sensitivity and emotional intelligence to process reactions and responses and adjust appeals accordingly;

(D) adapt constituent expectations to coincide with desired timeliness without losing support;

(E) evaluate and employ techniques for motivating staff; and

(F) create procedures for avoiding ethical pitfalls.

§130.188. National Security (Two to Three Credits).

(a) 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.

(b) Introduction. 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.

(c) Knowledge and skills.

(1) The student identifies the personnel and organizational structure within a security agency. The student is expected to:

(A) develop and implement goals and objectives of an organization;

(B) align personnel assignments with job demands;

(C) assess the demands of assigned tasks and responsibilities on personnel;

(D) implement evaluation systems and standards of the organization; and

(E) access and use available counseling and training resources.

(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;

(B) evaluate United States and international laws, treaties, and conventions applicable to military or other security agency conduct;

(C) employ effective training materials;

(D) facilitate discussions of ethical issues raised by current events;

(E) investigate compliance procedures such as United States military, international military, maritime, criminal, and civil law;

(F) apply laws, rules, or standards to appropriate situations; and

(G) evaluate and recognize 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) work within the scope and limits of the assigned mission in the simulated exercise;

(B) evaluate physical, psychological, cultural, and military threats;

(C) define the specific goals and intentions of foreign entities relevant to mission;

(D) analyze physical characteristics of areas that could become battlegrounds in time of war;

(E) analyze foreign troop and equipment movement;

(F) evaluate aerial and satellite information;

(G) direct ground and sea surveillance;

(H) prepare intelligence reports, maps, and charts;

(I) innovate methods to test for security leaks;

(J) intercept foreign military communications; and

(K) coordinate information with other national security agencies.

(4) The student translates and analyzes signals to discover elements indicative of intent, plans, and operations of potentially hostile governments, groups, or individuals through simulated exercises. The student is expected to:

(A) organize evidence to facilitate discovery of a potentially hostile nature; and

(B) interpret 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 and implement plans for response to both hostile and unintended events;

(B) secure equipment and supplies needed for protection against chemical, biological, or nuclear effects;

(C) evaluate intelligence information for determination of response plan implementation;

(D) monitor local and global intelligence such as information about weather and geophysical events;

(E) maintain communications with federal, state, and local agencies; and

(F) evaluate the security and safety of network cyber-based systems.

(6) The student develops and implements strategies to train persons potentially performing national security tasks. The student is expected to:

(A) analyze missions for which training is to be provided;

(B) plan and evaluate teaching methods;

(C) devise means of evaluating student progress; and

(D) prepare units of instruction that recognize mission priorities.

§130.189. Foreign Service and Diplomacy (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Principles of Government and Public Administration.

(b) Introduction. 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.

(c) Knowledge and skills.

(1) The student integrates knowledge and presentation skills related to diplomacy when 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 United States government and culture;

(B) organize exchange programs to enable future host-country decision makers to acquire familiarity with the United States institutions, customs, and culture;

(C) analyze the effectiveness of foreign support programs and other efforts of United States economic, intelligence, and affiliate agencies;

(D) arrange for United States experts to speak to selected audiences;

(E) provide routine information services by electronic and other means;

(F) address and respond to media personnel on matters of United States policy raised in conjunction with visits of United States officials; and

(G) address and respond to media personnel on matters of United States policy in reaction to unanticipated events.

(2) 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 United States programs and official visits;

(B) analyze and report on impact of American travelers and popular culture on host country;

(C) analyze and report on expressions of opinion arising from host-country events, official statements, and political actions;

(D) assess impact of host-country responses to catastrophic events; and

(E) forecast and formulate risk-management solutions regarding catastrophic events of host-countries.

(3) The student applies United States and host-country laws, regulations, policies, and procedures to manage administrative matters. The student is expected to:

(A) apply United States immigration laws and regulations to determine eligibility of individuals;

(B) explain grounds for refusal of visas to applicants, lawyers, congresspersons, and other interested parties;

(C) research documents and databases;

(D) apply identification and documentation procedures;

(E) develop or analyze an existing network of key host-country contacts; and

(F) exchange information with other agencies.

(4) 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) negotiate with the host government on reciprocity issues, taxation, diplomatic status, and other matters affecting welfare, security, and status of mission; and

(B) procure goods and services for diplomatic operations.

§130.190. Practicum in Local, State, and Federal Government (Two to Three Credits).

(a) 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 courses in the Government and Public Administration cluster.

(b) Introduction. Students concurrently learn advanced concepts of political science in the classroom setting. 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.

(c) Knowledge and skills.

(1) The student analyzes classic and modern political theories. The student is expected to:

(A) review philosophers such as Plato, Aristotle, Cicero, Machiavelli, Confucius, Hobbes, Locke, Hegel, and Marx; and

(B) analyze contributions to modern political science from complex 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 United States Constitution and constitutional law. The student is expected to:

(A) review basic information about the United States Constitution such as the framers, Articles of Confederation, Constitutional Conventions, separation of powers, checks and balances, ratification, and the amendment process;

(B) create and implement a Classroom Constitution and Bill of Rights simulating the United States Constitution;

(C) enforce the Classroom Constitution and Bill of Rights; and

(D) research and role play a current event in constitutional law.

(3) The student explores government ethics. The student is expected to:

(A) examine local, state, national, and international ethic issues;

(B) hypothesize the origins of ethics violations; and

(C) 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 during student mentorship 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) collect secondary data such as printed materials and Internet information;

(E) evaluate alternative solutions;

(F) determine the most appropriate solution;

(G) express thoughts logically and sequentially in preparing a formal report;

(H) interpret and present quantitative data in graph format within the report;

(I) prepare visuals and handouts to support the presentation; and

(J) make a final presentation of the study to the appropriate stakeholders, including teachers, mentors, and business and industry representatives.

(5) The student documents knowledge and skills attained in the practicum. The student is expected to:

(A) update a professional portfolio to include:

(i) recognitions, awards, and scholarships;

(ii) extended learning experiences such as community service and active participation in career and technical organizations and professional organizations;

(iii) an abstract of the practicum;

- (iv) resumé;
- (v) samples of work; and
- (vi) an evaluation from the practicum supervisor;

and

- (B) present the portfolio to all interested stakeholders.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

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For further information, please call: (512) 475-1497



## SUBCHAPTER H. HEALTH SCIENCE

### 19 TAC §§130.201 - 130.209

The State Board of Education (SBOE) proposes new §§130.201-130.209, concerning the Texas essential knowledge and skills (TEKS) for health science. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meet-

ing. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section

28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.201. Implementation of Texas Essential Knowledge and Skills for Health Science.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.202. Principles of Health Science (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-11.

(b) Introduction.

(1) The Principles of Health Science provides an overview of the therapeutic, diagnostic, health informatics, support services, and biotechnology research and development systems of the health care industry.

(2) 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.

(3) 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.

(4) 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 and limitations and understand the implications of their actions.

(c) 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) compare and contrast 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 cause and effect of changing employment situations.

(5) The student identifies professional characteristics, academic preparation, and skills necessary for employment as defined by the health science industry. The student is expected to:

(A) identify employer expectations such as punctuality, attendance, time management, communication, organizational skills, and productive work habits; and

(B) identify academic requirements for professional advancement such as certification, licensure, registration, continuing education, and advanced degrees.

(6) The student identifies the systems 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 confidentiality and ethical behavior, 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) recognize 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 and in promoting a healthy community;

(D) review documentation related to rights and choices; and

(E) recognize 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, Occupational Safety and Health Administration, Food and Drug Administration, and National Institute for Occupational Safety and Health;

(B) relate industry safety standards such as standard precautions, fire prevention, safety practices, and appropriate actions to emergency situations; and

(C) identify safety practices in all aspects of 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) identify technological equipment used in each of the five systems and relate findings to identified societal risk factors; and

(B) recognize and relate the process for reporting equipment or technology malfunctions.

§130.203. Medical Terminology (One-Half Credit).

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) Introduction.

(1) This course is designed to introduce students to the structure of medical terms, including prefixes, suffixes, word roots, combining forms, and singular and plural forms, plus medical abbreviations and acronyms. The course allows students to achieve comprehension of medical vocabulary appropriate to medical procedures, human anatomy and physiology, and pathophysiology.

(2) To pursue a career in health science, students should learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should understand that quality health care depends on the ability to work well with others.

(3) 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.

(4) 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 and limitations and understand the implications of their actions.

(c) 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;

(B) identify the basic structure of medical words;

(C) practice word-building skills;

(D) research the origins of eponyms;

(E) recall directional terms and anatomical planes related to body structure; and

(F) define and accurately spell occupationally specific terms such as those relating to the body systems, surgical and diagnostic procedures, diseases, and treatments.

(2) The student demonstrates communication skills using the terminology applicable to the health science industry. The student is expected to:

(A) demonstrate appropriate verbal and written strategies such as correct pronunciation of medical terms and 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;

and (B) integrate resources to interpret technical materials;

(C) investigate electronic media such as the Internet 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) correctly interpret contents of medical scenarios.

§130.204. Health Science (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Principles of Health Science and Biology.

(b) Introduction.

(1) The Health Science course is designed to provide for the development of advanced knowledge and skills related to a wide variety of health careers. Students will have hands-on experiences for continued knowledge and skill development. The course may be taught by different methodologies such as clinical rotation and career preparation learning.

(2) 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.

(3) 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.

(4) 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.

(c) 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) apply electronic communication with appropriate supervision.

(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 situations.

(4) The student relates appropriate information to the proper authority. The student is expected to:

(A) identify and retrieve reportable information; and

(B) report information according to facility policy.

(5) The student identifies documents integrated into the permanent record of the health informatics system. The student is expected to:

(A) describe document formats; and

(B) compile and record data according to regulatory agency policy.

(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, Occupational Safety and Health Administration, Food and Drug Administration, and National Institute for Occupational Safety and 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 such as peers, family, and friends;

(C) explain the benefits of positive relationships among community health professionals in promoting a healthy community;

(D) examine access to quality health care; and

(E) research alternative health practices and therapies.

§130.205. Practicum in Health Science (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Health Science and Biology.

(b) Introduction.

(1) The Practicum 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.

(2) 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.

(3) 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.

(4) 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 and limitations and understand the implications of their actions.

(c) 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;

(F) distinguish atypical anatomy and physiology in the human body systems;

- (G) implement scientific methods in preparing clinical case studies; and
- (H) compare and contrast health issues in the global society.
- (2) The student uses verbal and non-verbal communication skills. The student is expected to:
- (A) accurately describe and report information, according to facility policy, observations, 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 science 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) research academic requirements for professional advancement such as certification, licensure, registration, continuing education, and advanced degrees;
- (C) describe the steps necessary for entrepreneurship in a free enterprise system;
- (D) develop new problem-solving strategies based on previous knowledge and skills; and
- (E) evaluate performance for continuous improvement and advancement in health science.
- (4) The student employs ethical behavior standards and legal responsibilities. The student is expected to:
- (A) appraise individual ethical and legal behavior standards according to professional regulatory agencies;
- (B) integrate legal and ethical behavior standards such as Patient Bill of Rights, Advanced Directives, and the Health Insurance Portability and Accountability Act into the scope of practice; and
- (C) critique court cases related to professional liability and ethics.
- (5) The student analyzes the role of a health science team member. The student is expected to:
- (A) participate in team teaching and conflict management such as peer mediation, problem solving, and negotiation skills;
- (B) refine consensus-building techniques; and
- (C) engage in leadership opportunities in the community.
- (6) 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) respond to emergencies consistent with the student's level of training such as fire and disaster drills;
- (C) evaluate hazardous materials according to the material safety data sheets; and
- (D) apply principles of infection control and body mechanics in all aspects of the health science industry.

- (7) The student explores the knowledge and skill levels necessary for advancing in the health science professions. The student is expected to:
- (A) interpret knowledge and skills that are transferable among health science professions;
- (B) plan academic achievement for advancement in the health science industry; and
- (C) analyze emerging technologies in the health science industry.
- (8) The student implements skills in monitoring individual health status during therapeutic or diagnostic procedures. The student is expected to:
- (A) describe pre-procedural preparations;
- (B) observe therapeutic or diagnostic procedures;
- (C) identify care indicators of health status; and
- (D) record health status according to facility protocol.
- (9) The student documents technical knowledge and skills. The student is expected to:
- (A) update a professional portfolio to include:
- (i) technical skill competencies;
- (ii) licensure or certifications;
- (iii) 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 technical competencies mastered during the practicum;
- (vi) resumé;
- (vii) samples of work; and
- (viii) evaluation from the practicum supervisor; and
- (B) present the portfolio to all interested stakeholders such as in a poster presentation.
- §130.206. Anatomy and Physiology (One Science Credit).
- (a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: three credits of science. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum).
- (b) Introduction.
- (1) Anatomy and Physiology. In Anatomy and Physiology, students 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 study a variety of topics, including the structure and function of the human body and the interaction of body systems for maintaining homeostasis.
- (2) 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.

(3) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation are experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

(4) Science and social ethics. Scientific decision making is a way of answering questions about the natural world. 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).

(5) Science, systems, and models. A system is a collection of cycles, structures, and processes that interact. 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. 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.

(c) Knowledge and skills.

(1) The student conducts investigations, for at least 40% of instructional time, using safe, environmentally appropriate, and ethical practices. These investigations must involve actively obtaining and analyzing data with physical equipment, but may also involve experimentation in a simulated environment as well as field observations that extend beyond the classroom. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations; and

(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.

(2) The student uses scientific methods and equipment during laboratory and field investigations. The student is expected to:

(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section;

(B) know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories;

(C) know 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;

(D) distinguish between scientific hypotheses and scientific theories;

(E) plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology;

(F) collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, electronic balances, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter

sticks, and models, diagrams, or samples of biological specimens or structures;

(G) analyze, evaluate, make inferences, and predict trends from data; and

(H) communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

(3) The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials;

(C) draw inferences based on data related to promotional materials for products and services;

(D) evaluate the impact of scientific research on society and the environment;

(E) evaluate models according to their limitations in representing biological objects or events; and

(F) research and describe the history of science and contributions of scientists.

(4) The student evaluates the energy needs of the human body and the processes through which these needs are fulfilled. The student is expected to:

(A) analyze the chemical reactions that provide energy for the body;

(B) evaluate the means, including the structure and function of the digestive system, by which energy is processed and stored within the body;

(C) analyze the effects of energy deficiencies in malabsorption disorders such as diabetes, hypothyroidism, and Crohn's disease; and

(D) analyze the effects of energy excess in disorders such as obesity as it relates to cardiovascular and musculoskeletal systems.

(5) The student differentiates the responses of the human body to internal and external forces. The student is expected to:

(A) explain the coordination of muscles, bones, and joints that allows movement of the body;

(B) investigate and report the uses of various diagnostic and therapeutic technologies;

(C) interpret normal and abnormal contractility conditions such as in edema, glaucoma, aneurysms, and hemorrhage;

(D) analyze and describe the effects of pressure, movement, torque, tension, and elasticity on the human body; and

(E) perform an investigation to determine causes and effects of force variance and communicate findings.

(6) The student examines the body processes that maintain homeostasis. The student is expected to:

(A) investigate and describe the integration of the chemical and physical processes, including equilibrium, temperature, pH balance, chemical reactions, passive transport, active transport, and biofeedback, that contribute to homeostasis; and

(B) determine the consequences of the failure to maintain homeostasis.

(7) The student examines the electrical conduction processes and interactions. The student is expected to:

(A) illustrate conduction systems such as nerve transmission or muscle stimulation;

(B) investigate the therapeutic uses and effects of external sources of electricity on the body system; and

(C) evaluate the application of advanced technologies such as electroencephalogram, electrocardiogram, bionics, transcutaneous electrical nerve stimulation, and cardioversion.

(8) The student explores the body's transport systems. The student is expected to:

(A) analyze the physical, chemical, and biological properties of transport systems, including circulatory, respiratory, and excretory;

(B) determine the factors that alter the normal functions of transport systems; and

(C) contrast the interactions among the transport systems.

(9) The student investigates environmental factors that affect the human body. The student is expected to:

(A) identify the effects of environmental factors such as climate, pollution, radioactivity, chemicals, electromagnetic fields, pathogens, carcinogens, and drugs on body systems; and

(B) explore measures to minimize harmful environmental factors on body systems.

(10) The student investigates structure and function of the human body. The student is expected to:

(A) analyze the relationships between the anatomical structures and physiological functions of systems, including the integumentary, nervous, skeletal, musculoskeletal, cardiovascular, respiratory, gastrointestinal, endocrine, and reproductive;

(B) evaluate the cause and effect of disease, trauma, and congenital defects on the structure and function of cells, tissues, organs, and systems;

(C) research technological advances and limitations in the treatment of system disorders; and

(D) examine characteristics of the aging process on body systems.

(11) The student describes the process of reproduction and growth and development. The student is expected to:

(A) explain embryological development of tissues, organs, and systems;

(B) identify the functions of the male and female reproductive systems; and

(C) summarize the human growth and development cycle.

(12) The student recognizes emerging technological advances in science. The student is expected to:

(A) recognize advances in stem cell research such as cord blood utilization; and

(B) recognize advances in bioengineering and transplant technology.

§130.207. *Medical Microbiology (One-Half to One Science Credit).*

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: three credits of science. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum).

(b) Introduction.

(1) Medical Microbiology. Students in Medical Microbiology explore the microbial world, studying topics such as pathogenic and non-pathogenic microorganisms, laboratory procedures, identifying microorganisms, drug resistant organisms, and emerging diseases.

(2) 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.

(3) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation are experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

(4) Science and social ethics. Scientific decision making is a way of answering questions about the natural world. 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).

(5) Science, systems, and models. A system is a collection of cycles, structures, and processes that interact. 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. 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.

(c) Knowledge and skills.

(1) The student conducts investigations, for at least 40% of instructional time, using safe, environmentally appropriate, and ethical practices. These investigations must involve actively obtaining and analyzing data with physical equipment, but may also involve experimentation in a simulated environment as well as field observations that extend beyond the classroom. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations; and

(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.

(2) The student uses scientific methods and equipment during laboratory and field investigations. The student is expected to:

(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section;

(B) know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories;

(C) know 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;

(D) distinguish between scientific hypotheses and scientific theories;

(E) plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology;

(F) collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, electronic balances, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures;

(G) analyze, evaluate, make inferences, and predict trends from data; and

(H) communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

(3) The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials;

(C) draw inferences based on data related to promotional materials for products and services;

(D) evaluate the impact of scientific research on society and the environment;

(E) evaluate models according to their limitations in representing biological objects or events; and

(F) research and describe the history of science and contributions of scientists.

(4) The student describes the relationships between microorganisms and health and wellness in the human body. The student is expected to:

(A) research and describe the historical development of microbiology as it relates to health care of an individual;

(B) identify chemical processes of microorganisms;

(C) recognize the factors required for microbial reproduction and growth;

(D) explain pathogenic and non-pathogenic microbes in the human body;

(E) describe the morphology and characteristics of microorganisms using a variety of microbiological techniques;

(F) discuss the results of laboratory procedures that are used to identify microorganisms;

(G) explain how pathogens affect the human body systems; and

(H) research roles, functions, and responsibilities of agencies governing infectious disease control.

(5) The student examines the role of pathogens in infectious diseases. The student is expected to:

(A) outline the infectious process;

(B) classify microorganisms using a dichotomous key;

(C) categorize diseases caused by bacteria, fungi, viruses, protozoa, rickettsias, arthropods, and helminths;

(D) explain the body's immune response and defenses against infection;

(E) evaluate the effects of anti-microbial agents;

(F) examine reemergence of diseases such as malaria, tuberculosis, and polio;

(G) investigate drug-resistant microorganisms, including methicillin-resistant *Staphylococcus aureus*, vancomycin-resistant enterococci, and superbugs; and

(H) outline the role of the governing agencies in monitoring and establishing guidelines based on the spread of infectious diseases.

§130.208. Pathophysiology (One-Half to One Science Credit).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: three credits of science. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum).

(b) Introduction.

(1) Pathophysiology. In Pathophysiology, students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Pathophysiology study disease processes and how humans are affected. Emphasis is placed on prevention and treatment of disease. Students will differentiate between normal and abnormal physiology.

(2) 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.

(3) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of in-

investigation are experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

(4) Science and social ethics. Scientific decision making is a way of answering questions about the natural world. 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).

(5) Science, systems, and models. A system is a collection of cycles, structures, and processes that interact. 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. 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.

(c) Knowledge and skills.

(1) The student conducts investigations, for at least 40% of instructional time, using safe, environmentally appropriate, and ethical practices. These investigations must involve actively obtaining and analyzing data with physical equipment, but may also involve experimentation in a simulated environment as well as field observations that extend beyond the classroom. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations; and

(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.

(2) The student uses scientific methods and equipment during laboratory and field investigations. The student is expected to:

(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section;

(B) know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories;

(C) know 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;

(D) distinguish between scientific hypotheses and scientific theories;

(E) plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology;

(F) collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, electronic balances, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures;

(G) analyze, evaluate, make inferences, and predict trends from data; and

(H) communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

(3) The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials;

(C) draw inferences based on data related to promotional materials for products and services;

(D) evaluate the impact of scientific research on society and the environment;

(E) evaluate models according to their limitations in representing biological objects or events; and

(F) research and describe the history of science and contributions of scientists.

(4) The student analyzes the mechanisms of pathology. The student is expected to:

(A) identify biological and chemical processes at the cellular level;

(B) detect changes resulting from mutations and neoplasms by examining cells, tissues, organs, and systems;

(C) identify factors that contribute to disease such as age, gender, environment, lifestyle, and heredity;

(D) examine the body's compensating mechanisms occurring under various conditions; and

(E) analyze how the body attempts to maintain homeostasis when changes occur.

(5) The student examines the process of pathogenesis. The student is expected to:

(A) identify pathogenic organisms using microbiological techniques;

(B) differentiate the stages of pathogenesis, including incubation period, prodromal period, and exacerbation or remission;

(C) analyze the body's natural defense systems against infection such as barriers, the inflammatory response, and the immune response;

(D) evaluate the effects of chemical agents, environmental pollution, and trauma on the disease process; and

(E) research stages in the progression of disease.

(6) The student examines a variety of human diseases. The student is expected to:

(A) describe on the nature of diseases according to etiology, signs and symptoms, diagnosis, prognosis, and treatment options;



(B) explore advanced technologies for the diagnosis and treatment of disease;

(C) examine reemergence of diseases such as malaria, tuberculosis, and polio;

(D) describe drug-resistant diseases;

(E) differentiate between congenital disorders and childhood diseases; and

(F) investigate ways diseases affect multiple body systems.

(7) 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) evaluate treatment options for diseases;

(D) investigate diseases that threaten world health and propose intervention strategies; and

(E) develop a plan for personal health and wellness.

§130.209. World Health Research (One Credit).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Biology and Chemistry.

(b) Introduction. This course examines major world health problems and emerging technologies as solutions to these medical concerns. The course is designed to improve students' understanding of the cultural, infrastructural, political, educational, and technological constraints and inspire ideas for appropriate technological solutions to global medical care issues.

(c) 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) describe the function of the World Health Organization;

(E) define and calculate incidence, morbidity, and mortality; and

(F) identify and describe the challenges in global health, which can have the greatest impact on health in developing nations.

(2) The student explains who pays for health care in the world today. The student is expected to:

(A) compare the availability of health care in developing and developed countries;

(B) discuss and contrast the four basic health care system models such as the Beveridge Model, Bismarck Model, National Health Insurance Model, and the Out-of-Pocket Model;

(C) explain how countries such as the United Kingdom, Japan, Germany, Taiwan, Switzerland, and the United States of America pay for health care;

(D) describe how health care expenditures have changed over time; and

(E) identify the major contributors to the rising health science 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;

(C) investigate technologies used for the early detection of cancer;

(D) investigate technologies used for the treatment of several different types of cancers;

(E) explain the cardiovascular system and the technologies used in the diagnosis and treatment of heart disease; and

(F) describe and discuss technologies developed to support vital organ failure.

(4) The student explores how human clinical trials are designed, conducted, and evaluated. The student is expected to:

(A) identify types of clinical trials;

(B) define and calculate a sample size; and

(C) analyze quantitative methods used to describe clinical trials.

(5) The student recognizes the ethics involved in clinical research. The student is expected to:

(A) define informed consent;

(B) explain who can give informed consent;

(C) identify issues in research that influence the development of ethical principles and legal requirements currently governing research with human subjects; and

(D) explain the ethical guidelines for the conduct of research involving human subjects.

(6) The student explains how medical technologies are managed. The student is expected to:

(A) describe how health science research is funded;

(B) explain the role of the 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 problem. The student is expected to:

(A) construct charts and graphs in facilitating data analysis and in communicating experimental results clearly and effectively using technology; and

(B) present the project to classmates, health professionals, parents, or instructors.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902120

Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 475-1497



## SUBCHAPTER I. HOSPITALITY AND TOURISM

### 19 TAC §§130.221 - 130.230

The State Board of Education (SBOE) proposes new §§130.221-130.230, concerning the Texas essential knowledge and skills (TEKS) for hospitality and tourism. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the

May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.221. Implementation of Texas Essential Knowledge and Skills for Hospitality and Tourism.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.222. Principles of Hospitality and Tourism (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-11.

(b) Introduction. The hospitality and tourism industry encompasses lodging; travel and tourism; recreation, amusements, attractions, and resorts; and restaurants and food beverage service. The hospitality and tourism industry maintains the largest national employment base in the private sector. Students use knowledge and skills that meet industry standards to function effectively in various positions within this multifaceted industry. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) Knowledge and skills.

(1) The student applies academic skills for the hospitality and tourism industry. The student is expected to:

(A) write effectively using standard English and correct grammar;

(B) comprehend a variety of texts;

(C) create and proofread appropriate professional documents;

(D) calculate correctly using numerical concepts such as percentages and reasonable estimations; and

(E) infer how scientific principles are used in the hospitality and tourism industry.

(2) The student uses verbal and nonverbal communication to provide a positive experience for guests and employees. The student is expected to:

(A) develop and analyze formal and informal presentations; and

(B) practice customer service skills.

(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) display positive attitudes and good work habits; and

(D) develop strategies for achieving accuracy and organizational skills.

(4) The student develops principles in time management, decision making, and prioritizing. The student is expected to:

(A) apply effective practices for managing time and energy;

(B) analyze the importance of balancing a career, family, and leisure activities;

(C) analyze the various steps in the decision-making process; and

(D) work independently.

(5) 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 needed for careers in the hospitality and tourism industry;

(C) examine related community service opportunities; and

(D) create a career portfolio.

(6) The student uses technology to gather information. The student is expected to:

(A) demonstrate and operate computer applications to perform workplace tasks;

(B) examine types of computerized systems used to manage operations and guest services in the hospitality and tourism industry; and

(C) evaluate information sources for the hospitality and tourism industry.

(7) 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 meetings to accomplish tasks;

(D) determine leadership and teamwork qualities in creating a pleasant working atmosphere; and

(E) participate in community service activities.

(8) The student explains how employees, guests, and property are protected to minimize losses or liabilities in the hospitality and tourism industry. The student is expected to:

(A) determine job safety and security;

(B) implement the basics of sanitation;

(C) understand and demonstrate procedures for cleaning, sanitizing, and storing equipment and tools; and

(D) determine how environmental issues such as recycling and saving energy affect the hospitality and tourism industry.

(9) The student explores and explains the roles within each department of the hospitality and tourism industry. The student is expected to:

(A) examine the duties and responsibilities required within operational departments; and

(B) research the job qualifications for various positions to facilitate selection of career choices.

(10) The student demonstrates research skills applicable to the hospitality and tourism industry. The student is expected to:

(A) develop technical vocabulary to enhance customer service;

(B) use travel information to design a customized product for travelers;

(C) examine elements of a dining experience expected to satisfy guests at varied facilities such as a boardwalk vendor, cruise ship, chain restaurant, and five-star dining facility; and

(D) identify local and regional tourism issues.

(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;

(C) plan a cost effective trip or itinerary to meet customer needs; and

(D) examine different types of food service.

§130.223. Hotel Management (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Hospitality and Tourism.

(b) Introduction. This course 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. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) 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 hotel industry. The student is expected to:

(A) organize oral and written information;

(B) compose a variety of written documents such as agendas, thank you letters, presentations, and advertisements;

(C) calculate correctly using numerical concepts such as percentage and reasonable estimation in practical situations; and

(D) infer how scientific principles are used in the hotel industry.

(2) 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 hotel or an available service;

(C) demonstrate proper techniques for using telecommunications equipment;

(D) interpret verbal and nonverbal cues to enhance communication with individuals such as coworkers, customers, and clients;

(E) locate written information used to communicate with individuals such as coworkers and customers;

(F) apply active listening skills to obtain and clarify information; and

(G) follow directions and procedures independently.

(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;

(B) employ critical-thinking and interpersonal skills to resolve conflicts with individuals such as coworkers, employers, customers, and clients; and

(C) use principles of budgeting and forecasting to maximize profit and growth.

(4) 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 and demonstrate positive work behaviors and personal qualities for employability; and

(C) analyze the effects of health and wellness on employee performance.

(5) The student develops principles in time management, decision making, effective communication, and prioritizing. The student is expected to:

(A) apply effective practices for managing time and energy;

(B) implement stress-management techniques;

(C) analyze various steps in the decision-making process; and

(D) analyze the importance of balancing a career, family, and leisure activities.

(6) The student understands the importance of employability skills. The student is expected to:

(A) identify the required training or education requirements that lead to an appropriate industry certification;

(B) comprehend and model skills related to seeking employment;

(C) update a personal career portfolio;

(D) demonstrate proper interview techniques in applying for employment;

(E) complete required employment forms 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 organizations and development training opportunities to keep current on relevant trends and information within the industry; and

(H) explore entrepreneurship opportunities.

(7) The student understands roles within teams, work units, departments, organizations, and the larger environment of the hotel industry. The student is expected to:

(A) distinguish among the duties and responsibilities within each department;

(B) implement quality-control standards and practices;

(C) compare and contrast full service hotels and limited service properties; and

(D) compare and contrast chain and franchise hotels, including revenue and support centers.

(8) The student uses information technology tools specific to hotel management to access, manage, integrate, and create information. The student is expected to:

(A) use information technology tools to manage and perform work responsibilities;

(B) use technology tools to perform workplace tasks;

(C) prepare complex multimedia publications;

(D) demonstrate knowledge and use of point-of-sale systems; and

(E) evaluate Internet resources for industry information.

(9) 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 leadership and teamwork qualities in creating a pleasant working atmosphere; and

(D) participate in community leadership and teamwork opportunities to enhance professional skills.

(10) 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) comprehend and model professional attire and personal hygiene.

(11) The student knows and understands the importance of professional ethics and legal responsibilities within the hotel industry. The student is expected to:

(A) demonstrate professional ethical standards; and

(B) interpret and explain written organizational policies and procedures to help employees perform their jobs.

(12) The student understands the knowledge and skills required for careers in the hotel management 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) determine the functions of meeting and event planning;

(D) evaluate current and emerging technologies to improve guest services; and

(E) understand the importance of check-out procedures to ensure guest satisfaction and verify settlement of account.

§130.224. Restaurant Management (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Hospitality and Tourism.

(b) Introduction. This course 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. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) 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 industry. The student is expected to:

(A) organize oral and written information;

(B) compose a variety of written documents such as agendas, menus, presentations, and advertisements;

(C) calculate correctly using numerical concepts such as percentages and estimations in practical situations;

(D) infer how scientific principles are used in the restaurant 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 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 restaurant or food venue;

(C) demonstrate proper techniques for answering restaurant phones;

(D) interpret verbal and nonverbal cues to enhance communication with coworkers, employers, customers, and clients; and

(E) apply 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;

(B) employ critical-thinking and interpersonal skills to resolve conflicts with individuals such as coworkers, customers, clients, and employers; and

(C) use principles of budgeting and forecasting to maximize profit and growth.

(4) The student uses information technology tools specific to restaurant management to access, manage, integrate, and create information. The student is expected to:

(A) use information technology tools to manage and perform work responsibilities;

(B) use technology applications to perform workplace tasks;

(C) prepare complex multimedia publications;

(D) demonstrate knowledge and use of point-of-sale systems; and

(E) evaluate Internet resources for information.

(5) The student understands roles within teams, work units, departments, organizations, and the larger environment of the restaurant industry. The student is expected to:

(A) explain the different types and functions of departments;

(B) investigate quality-control standards and practices;

(C) differentiate between various styles of restaurant services such as table, buffet, and fast food;

(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; and

(F) determine professional attire and personal hygiene for restaurant employees.

(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 restaurant 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) analyze the effects of health and wellness on employee 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 prioritizing. 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 restaurant industry;

(B) identify the required training and educational requirements that lead toward an appropriate industry certification;

(C) select educational and work history highlights to include in a career portfolio;

(D) update a personal career portfolio;

(E) complete required employment forms 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) explore entrepreneurship opportunities.

(12) The student understands the use of technical knowledge and skills required to pursue careers in the restaurant 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.

§130.225. *Travel and Tourism Management (One-Half to One Credit).*

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Hospitality and Tourism.

(b) Introduction. This course 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. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) 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 travel and tourism industry. The student is expected to:

(A) organize oral and written information;

(B) compose a variety of written documents such as itineraries, thank you letters, presentations, and advertisements;

(C) deliver different types of presentations such as informative, instructional, persuasive, and decision-making;

(D) calculate correctly using numerical concepts such as percentages and estimations in practical situations;

(E) investigate the elements of geography that affect travel and tourism customer service; and

(F) summarize how to use the state of the economy to plan products and service.

(2) 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) employ verbal skills when obtaining and conveying information;

(B) use verbal and nonverbal communication skills effectively with individuals such as customers, coworkers, and employers to foster positive relationships; and

(C) develop and deliver presentations using appropriate technology to engage and inform audiences.

(3) The student solves problems using critical-thinking skills independently and in teams. 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) use principles of budgeting and forecasting to maximize profit and growth for travel and tourism establishments; and

(D) analyze customer comments to formulate improvements in services and products and training of staff.

(4) 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 electronic mail applications to communicate within a workplace;

(B) distinguish among the different modes of travel such as airline, cruise line, and rail;

(C) differentiate among recreation, amusement, attraction, and resort venues;

(D) use technology applications to perform workplace tasks;

(E) understand the travel arrangements system used for booking reservations;

(F) employ computer operations applications to manage work tasks; and

(G) create complex multimedia publications.

(5) 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 departments within a travel and tourism business;

(B) explain the functions and interactions of various travel and tourism businesses;

(C) implement quality-control systems and practices;

(D) develop and manage plans to accomplish organizational goals; and

(E) formulate collaboration with other industries to provide an all-inclusive product for the customer.

(6) 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) demonstrate first aid and cardiopulmonary resuscitation;

(D) describe environmental procedures that ensure a facility is in compliance with health codes;

(E) describe how to respond to emergency situations;

(F) analyze potential effects caused by common chemicals and hazardous materials; and

(G) analyze security measures to protect the guests, customers, and staff and to limit liability.

(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) apply teamwork and leadership qualities in creating a pleasant work environment;
- (D) determine the impact of cultural diversity on teamwork; and
- (E) participate in community service opportunities to enhance professional skills.

(8) The student knows and understands the importance of professional ethics and legal responsibilities. The student is expected to:

- (A) apply ethical reasoning to a variety of workplace situations in order to make decisions;
- (B) examine information on organizational policies in handbooks and manuals; and
- (C) develop guidelines for professional conduct.

(9) 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 behaviors necessary to be employable and maintain employment such as positive work ethics and positive personal qualities;
- (B) identify the training and education requirements that lead toward an appropriate certification for employment;
- (C) demonstrate skills related to seeking employment in the travel and tourism industry;
- (D) demonstrate proper interview techniques;
- (E) update a career portfolio;
- (F) identify and exhibit traits for retaining employment;
- (G) investigate professional development training opportunities to keep current within the industry;
- (H) examine appropriate credentialing requirements to maintain compliance with industry requirements;
- (I) interpret the effect of stress, fatigue, and anxiety on job performance;
- (J) complete required employment forms such as I-9, work visa, W-4, and licensures to meet employment requirements;
- (K) research the local and regional labor workforce market to determine opportunities for advancement; and
- (L) explore entrepreneurship opportunities.

(10) The student develops principles in time management, decision making, effective communication, and prioritizing. The student is expected to:

- (A) apply effective practices for managing time and energy;
- (B) analyze various steps in the decision-making process; and

(C) discuss the importance of balancing a career, family, and leisure activities.

(11) The student uses technical knowledge and skills required to pursue careers 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) use different types of payment options;
- (E) analyze customer service concepts;
- (F) evaluate customer service scenarios;
- (G) describe how customer service affects a company's bottom line;

(H) develop an awareness of cultural diversity to enhance travel planning by exploring differences in social etiquette, dress, and behaviors of different countries;

(I) demonstrate an understanding of tourism sales and distribution systems; and

(J) demonstrate knowledge of destination and attraction planning and development, including the use of organizations such as convention and visitor's bureaus and state tourist boards.

§130.226. Culinary Arts (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Restaurant Management, Lifetime Nutrition and Wellness, or Principles of Hospitality and Tourism.

(b) Introduction. 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, a Texas culinary specialist certification, or any other appropriate industry certification. This course may be offered as a laboratory-based or internship course. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) 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;
- (B) comprehend a variety of texts such as operations and training manuals;
- (C) calculate correctly using 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 or culinary procedure or the use of a piece of equipment; and

(D) attend and participate in a 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) evaluate the effects of exercise and nutritional 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 prioritizing. The student is expected to:

(A) apply effective practices for managing time and energy;

(B) analyze various steps in the decision-making process; and

(C) analyze the importance of balancing a career, family, and leisure activities.

(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 all staff and managerial positions to facilitate selection of career choices in culinary arts;

(B) update a personal career portfolio;

(C) demonstrate proper interview techniques;

(D) establish personal short-term and long-term goals; and

(E) examine food service related community service opportunities.

(6) The student understands the history of food service and the use of the professional kitchen. The student is expected to:

(A) research famous chefs from history and note their major accomplishments;

(B) identify global cultures and traditions related to food;

(C) summarize historical entrepreneurs who influenced food service in the United States;

(D) analyze how current trends in society affect the food service industry;

(E) use large and small equipment in a commercial kitchen;

(F) develop food production and presentation techniques;

(G) demonstrate moist and dry cookery methods;

(H) 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;

(I) demonstrate baking techniques such as yeast breads and rolls, quick breads, and desserts;

(J) demonstrate proper receiving and storage techniques;

(K) demonstrate proper cleaning of equipment and maintenance of the commercial kitchen; and

(L) demonstrate types of table setting, dining, and service skills.

(7) 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 the use of point-of-sale systems;

(D) demonstrate knowledge in computer programs used for food production; and

(E) evaluate information sources for culinary arts.

(8) 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.

(9) The student explains how employees, guests, and property are protected to minimize losses or liabilities. The student is expected to:

(A) determine 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) assess food hazards and determine ways to prevent food hazards; and

(E) prepare for a state or national food sanitation certification or other appropriate certifications.

(10) 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.

(11) The student demonstrates the knowledge and skills required for careers in the restaurant, food, and beverage industry. The student is expected to:

(A) understand the basics of nutrition;

(B) analyze the concepts of customer service and determine the critical moments of good service;

(C) develop a marketing plan;

(D) identify purchasing specifications and write purchase orders;

(E) determine proper receiving, storage, and distribution techniques;

(F) analyze international cuisines;

(G) detail ways to achieve high rates of customer satisfaction; and

(H) analyze how guests are affected by employee attitude, appearance, and actions.

§130.227. Practicum in Culinary Arts (Two to Three Credits).

(a) General Requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Culinary Arts or Hotel Management.

(b) Introduction.

(1) This course 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.

(2) Students are taught employability skills, which include job-specific skills applicable to their training plan, job interview techniques, communication skills, financial and budget activities, human relations, and portfolio development. Practicum in Culinary Arts is relevant and rigorous, supports student application of academic standards, and effectively prepares students for college and career success.

(3) 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 leadership or extracurricular organizations.

(c) 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 and I-9 and W-4 forms; 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) illustrate 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) analyze 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 with 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) research and compare published workplace policies;

(B) apply responsible and ethical behavior;

- Act;
- (C) summarize provisions of the Fair Labor Standards Act;
  - (D) describe the consequences of breach of confidentiality; and
  - (E) research laws related to culinary arts professions.

(6) The student applies the use of self-development techniques and 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:

(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; and

(D) analyze health and wellness practices that influence job performance.

(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) compare rewards and demands for various levels of employment in the area of culinary arts;

(D) evaluate strategies for career retention and advancement in response to the changing global workplace;

(E) summarize the rights and responsibilities of employers and employees; and

(F) 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 understands the history of food service and the use of the professional kitchen. The student is expected to:

(A) research famous chefs in history and note their major accomplishments;

(B) identify global cultures and traditions related to food;

(C) summarize historical entrepreneurs who influenced food service in the United States;

(D) analyze how current trends in society affect the food service industry;

(E) use large and small equipment in a commercial kitchen;

(F) develop food production and presentation techniques;

(G) demonstrate moist and dry cookery methods;

(H) 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;

(I) demonstrate baking techniques such as yeast breads and rolls, quick breads, and desserts;

(J) demonstrate proper receiving and storage techniques;

(K) demonstrate proper cleaning of equipment and maintenance of the commercial kitchen; and

(L) demonstrate types of table setting, dining, and service skills.

(11) The student documents technical knowledge and skills. The student is expected to:

(A) complete a professional career portfolio to include:

(i) an updated resumé;

(ii) official documentation of attainment of technical skill competencies;

(iii) licenses or certifications;

(iv) recognitions, awards, and scholarships;

(v) community service hours;

(vi) participation in student and professional organizations;

(vii) abstract of key points of the practicum; and

(viii) practicum supervisor evaluations; and

(B) present the professional career portfolio to interested stakeholders.

§130.228. Hospitality Services (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Hotel Management, Travel and Tourism Management, or Restaurant Management.

(b) Introduction. 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. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) Knowledge and skills.

(1) The student gains additional academic knowledge and skills required to pursue the full range of career and postsecondary education opportunities within the hospitality services industry. The student is expected to:

(A) apply advanced reading, writing, and mathematical skills necessary to perform job tasks in the hospitality industry;

(B) explain the effects that supply and demand have on the hospitality industry;

(C) develop marketing techniques;

(D) apply multiple time zones, climate, and seasons to create travel products;

(E) gather information from domestic and international sources using tools such as the Internet and maps to plan travel to other countries; and

(F) examine cultural differences of other areas, regions, and countries.

(2) The student uses listening, oral, written, and media communication skills in creating, expressing, and interpreting information and ideas, including technical terminology and information. The student is expected to:

(A) interpret verbal and nonverbal communication;

(B) recognize and respond to guest needs;

(C) outline procedures for processing messages;

(D) exhibit public relations skills;

(E) apply alternate communication services to assist customers with specialized needs; and

(F) design and present a marketing tool to promote a hospitality product that may contribute to the local economy.

(3) 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;

(B) demonstrate flexibility to learn new knowledge and skills;

(C) manage work responsibilities and life responsibilities;

(D) update a personal career portfolio;

(E) evaluate personal skills 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) examine the procedures in maintaining licensure, certification, or credentials for a chosen occupation;

(I) describe the types of facility ownership and determine the advantages and disadvantages for each;

(J) analyze future employment outlooks;

(K) demonstrate appropriate business and personal etiquette;

(L) develop written organizational policies to ensure successful hospitality operations, guest satisfaction, and employee success;

(M) use organizational charts to analyze workplace operations;

(N) research the major duties and qualifications for hospitality managerial positions; and

(O) review the functions, skills, and tasks of essential departments within a hospitality operation.

(4) The student examines and reviews ethical and legal responsibilities related to guests, employees, and conduct within the establishment to maintain high industry standards. The student is expected to:

(A) formulate improvements for customer service from guest comments;

(B) examine laws regarding hiring, harassment, and safety issues;

(C) determine legal responsibilities and employer policies; and

(D) analyze ethical considerations.

(5) The student uses information technology tools specific to hospitality service careers to access, manage, integrate, and 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 to improve guest service.

(6) The student applies leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives. The student is expected to:

(A) model qualities in employee retention by creating a pleasant working atmosphere for staff members;

(B) formulate staff training plans to create an effective working team; and

(C) apply conflict-management skills to facilitate solutions.

(7) The student solves problems using critical-thinking skills independently and in teams. The student is expected to:

(A) manage profitability by implementing effective marketing strategies;

(B) develop promotional packages;

(C) devise strategies for maximizing customer satisfaction;

(D) resolve unexpected situations; and

(E) create a business plan to examine employment opportunities in entrepreneurship.

(8) The student reviews the importance of health, safety, and environmental management systems in organizations and their importance to organization performance and regulatory compliance. The student is expected to:

(A) determine local safety and sanitation requirements;

(B) determine solutions to emergency situations;

(C) explain how key control procedures protect guests and minimize risks;

(D) explain how cash control procedures are used to protect funds;

(E) explain how guests and property are protected to minimize losses or liabilities;

(F) outline safety and security issues for individuals and groups in multiple environments to minimize risks;

(G) recognize potential, real, and perceived natural, social, or terrorism emergency situations in order to respond appropriately;

(H) examine equipment safety, functionality, and durability to protect guests and minimize replacement costs;

(I) evaluate methods for equipment maintenance and repair to minimize down time;

(J) determine sources of assistance to use in emergency situations, including self, coworkers, customers, and guests; and

(K) examine safety and security information relevant to the venue.

(9) The student understands roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment. The student is expected to:

(A) implement a set of operating procedures to comply with company requirements;

(B) evaluate prepared foods for quality and presentation to set quality standards in accordance with company standards;

(C) practice basic nutrition skills by planning, preparing, and presenting quality foods;

(D) evaluate types of kitchen equipment to match equipment with correct cooking methodology;

(E) use detailed processes to provide customer service in accordance with company policy;

(F) summarize the importance of housekeeping standards to assure guest satisfaction;

(G) prepare a staffing guide to schedule various staff positions to assure guest satisfaction;

(H) investigate how operations manage inventories to maintain adequate quantities of recycled and non-recycled items;

(I) explain how a status report is used to ensure housekeeping standards;

(J) outline the factors to consider when determining the size of an inventory purchase to maintain desired quantities based on varying occupancy levels;

(K) describe feasible collaboration with other industries to provide an inclusive product to the customer;

(L) compare venues and the unique organizational structure of various operating units;

(M) use guidelines for access control to determine guest and group admission procedures;

(N) apply traffic control procedures to facilitate movement of people and vehicles;

(O) evaluate maintenance issues to determine if special training of personnel is required; and

(P) research ideas needed to develop programs and products unique to each venue.

(10) The student uses technological knowledge and skills required to pursue careers in food service. The student is expected to:

(A) use technology to develop a set of operating procedures to comply with company requirements;

(B) analyze prepared foods for quality and presentation according to company standards; and

(C) provide customer service by following appropriate industry standards.

(11) The student uses technological knowledge and skills required to pursue careers in hotel services. The student is expected to:

(A) describe the necessary information collected during the registration process to correctly register guests;

(B) explain how room rates are established with arriving guests to assign the appropriate rate;

(C) explain how availability, room status, and other standard operating guidelines are used to assign rooms to arriving guests;

(D) explain how methods of payment are established with arriving guests to clarify payment procedures;

(E) explain how a hotel's computer system is used to create guest accounts;

(F) summarize correct check-out procedures to prevent oversights or errors; and

(G) examine the account settlement procedures on different types of payment.

(12) The student uses technological knowledge and skills required to pursue careers in travel and tourism. The student is expected to:

(A) develop technical vocabulary to enhance customer service;

(B) compare and contrast diverse transportation and lodging options to increase customer choices;

(C) examine elements of a dining experience expected to satisfy guests at varied facilities such as a boardwalk vendor, cruise ship, chain restaurant, and a five-star dining facility;

(D) integrate various and diverse elements of the travel and tourism industry to create a personalized travel experience for a customer; and

(E) evaluate and compare services and products from related industries.

§130.229. Practicum in Hospitality Services (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Hospitality Services.

(b) Introduction.

(1) A unique practicum experience provides 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.

(2) 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.

(3) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) 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 and I-9 and W-4 forms;

(D) demonstrate proper interview techniques in various situations;

(E) demonstrate verbal, nonverbal, written, and electronic communication skills; and

(F) apply effective listening skills used in the workplace.

(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 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; and

(I) evaluate the relationship of good physical and mental health to job success and personal achievement.

(3) The student applies work ethics, employer expectations, interaction with diverse populations, and communication skills in the workplace. The student is expected to:

(A) illustrate how personal integrity affects human relations on the job;

(B) demonstrate characteristics of successful working relationships such as teamwork, conflict resolution, self-control, and ability to accept criticism;

(C) analyze employer expectations;

(D) demonstrate respect for the rights of others;

(E) demonstrate ethical standards; and

(F) comply with organizational policies and procedures.

(4) The student applies academics with career 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 business documents.

(5) The student applies ethical behavior standards and legal responsibilities within the workplace. The student is expected to:

(A) research and compare published workplace policies;

(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 laws related to different hospitality services professions.

(6) The student applies the use of self-development techniques and 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 applies 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; and

(D) analyze health and wellness practices that influence job performance.

(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 hospitality services area;

(C) compare rewards and demands for various levels of employment in the area of hospitality services;

(D) evaluate strategies for career retention and advancement in response to the changing global workplace;

(E) summarize the rights and responsibilities of employers and employees; and

(F) 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 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 departments;

(B) perform duties in each of the departments of a hotel or tourism venue;

(C) compare and contrast full service hotels and limited service properties;

(D) analyze the differences between chain and franchise hotels; and

(E) explore the job duties in travel and tourism, recreation, and amusement and attraction venues.

(11) The student understands the knowledge and skills required for careers in the hotel management industry. The student is expected to:

(A) develop 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) apply the fundamentals of planning meetings and events;

(D) evaluate current and emerging technologies to improve guest services; and

(E) determine the correct procedures for check-out, bill payment, and settlement of accounts to ensure guest satisfaction.

(12) The student documents technical knowledge and skills. The student is expected to:

(A) complete a professional portfolio to include:

(i) an updated resumé;

(ii) official documentation of attainment of technical skill competencies, licensures, or certifications;

(iii) recognitions, awards, and scholarships;

(iv) community service hours;

(v) student organization participation; and

(vi) practicum supervisor evaluations; and

(B) present the professional career portfolio to interested stakeholders.

§130.230. Food Science (One Credit).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisites: three units of science. Recommended prerequisite: Principles of Hospitality and Tourism. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum).

(b) Introduction.

(1) Food Science. In Food Science students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Food Science is the study of the nature of foods, the causes of deterioration, the principles underlying food processing, and the improvement of foods for the consuming public.

(2) 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.

(3) Scientific inquiry. Food scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation are experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

(4) Science and social ethics. Scientific decision making is a way of answering questions about the natural world. 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).

(5) Science, systems, and models. A system is a collection of cycles, structures, and processes that interact. 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. 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.

(6) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) Knowledge and skills.

(1) The student, for at least 40% of instructional time, 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; and

(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.

(2) The student uses scientific methods and equipment during laboratory and field investigations. The student is expected to:

(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section;

(B) know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories;

(C) know 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;

(D) distinguish between scientific hypotheses and scientific theories;

(E) plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology;

(F) collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools and equipment;

(G) analyze, evaluate, make inferences, and predict trends from data; and

(H) communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

(3) The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials;

(C) draw inferences based on data related to promotional materials for products and services;

(D) evaluate the impact of scientific research on society and the environment;

(E) evaluate models according to their limitations in representing biological objects or events; and

(F) research and describe the history of science and contributions of scientists.

(4) The student analyzes the role of acids and bases in the food sciences. The student is expected to:

(A) identify the properties of acids and bases;

(B) describe the pH scale and how it is used;

(C) use various indicators to measure the pH of solutions;

(D) describe the importance of pH in digestion and blood; and

(E) discuss ways pH is related to the properties of food, its safety, and its freshness.

(5) The student applies the principles of food safety and microbiology. The student is expected to:

(A) investigate the properties of microorganisms that cause food spoilage;

(B) explain the difference between food intoxication and food infection;

(C) examine the conditions under which the important pathogens are commonly destroyed, inactivated, or rendered harmless in foods;

(D) discuss the difference between microorganisms that are helpful and those that are harmful; and

(E) analyze sanitary food-handling practices.

(6) The student studies the chemical properties of food. The student is expected to:

(A) discuss elements, compounds, mixtures, and formulas;

(B) explain the Periodic Table of the Elements;

(C) compare elements and compounds;

(D) describe heterogeneous and homogeneous mixtures;

(E) explain the similarities and differences between heterogeneous and homogeneous mixtures;

(F) identify chemical examples of pure substances and mixtures;

(G) identify chemical symbols, formulas, and equations and explain how they are used in food science;

(H) analyze the occurrence of specific chemical reactions; and

(I) analyze chemical and physical changes in food.

(7) The student analyzes solutions, colloids, solids, gels, foams, and emulsions. The student is expected to:

(A) identify the solvent and solute in a given solution;

(B) discuss the effect of a solute and its concentration on the boiling and freezing points of a solution;

(C) calculate the concentration of a solution using mass percent;



(D) compare and contrast unsaturated, saturated, and supersaturated solutions;

(E) describe the properties of colloidal dispersions;

(F) explain the three parts of an emulsion and their relationship to each other; and

(G) identify various food emulsions and the types of each emulsion.

(8) The student understands the functions of enzymes. The student is expected to:

(A) describe how enzymes act as catalysts in chemical reactions;

(B) explain the relationship between an enzyme and a substrate;

(C) discuss the enzymes involved in digestion;

(D) identify factors that affect enzyme activity; and

(E) explain how enzyme reactions are involved in food preparation.

(9) The student understands the role of fermentation in food sciences. The student is expected to:

(A) explain anaerobic respiration and how it is involved in metabolism and food science;

(B) list reasons food is fermented;

(C) describe how bacteria is used to ferment food, including how lactic acid bacteria creates sauerkraut from cabbage;

(D) compare fresh-pack pickling and brine pickling; and

(E) describe the process of making vinegar.

(10) The student discusses how leavening agents are used in baking. The student is expected to:

(A) describe the purpose of leavening agents in baked goods;

(B) identify and describe major leavening agents;

(C) explain why baking soda is used with an acid in baked goods;

(D) describe the types of dough and batters used in making quick breads;

(E) analyze the ingredients in baking powder;

(F) discuss how air and steam act as leavening agents; and

(G) identify the purposes of the ingredients used in making yeast breads.

(11) The student understands the purposes of additives in food. The student is expected to:

(A) discuss the use of food additives;

(B) describe properties of a desirable food preservative;

(C) explain why additives used as antioxidants are added to food;

(D) explain the difference between natural and artificial additives;

(E) identify kinds of sweeteners used in food processing;

(F) name nutrients that are used as food additives;

(G) discuss the advantages and disadvantages of using food additives; and

(H) identify agencies involved in regulating food additives.

(12) The student understands the physiology of digestion. The student is expected to:

(A) define mechanical and chemical digestive processes;

(B) explain the difference between mechanical and chemical digestive processes; and

(C) explain absorption as part of the digestive process.

(13) The student understands metabolism. The student is expected to:

(A) analyze components and byproducts of metabolism;

(B) define anabolism and catabolism;

(C) describe conditions needed for metabolism to occur;

(D) explain the process of osmosis and the role it plays in metabolism;

(E) discuss basal metabolism and the factors that affect it;

(F) identify levels of voluntary activity and how these affect the need for kilocalories;

(G) describe metabolic changes and the effect they have on the body during fasting; and

(H) explain why lactic acid builds up in the muscles during exercise and how this can be prevented or treated.

(14) The student explains how food provides energy. The student is expected to:

(A) discuss molecular motion and temperature;

(B) explain heat transfer;

(C) explain latent heat in phase changes;

(D) compare various temperatures on rates of reaction;

(E) analyze how the body uses energy and calories;

(F) describe the relationship of energy to physical and chemical reactions;

(G) analyze relationships between food intake and body weight;

(H) determine energy requirements of individuals using multiple variables such as activity level;

(I) discuss energy imbalances in relationship to weight-related disorders and diseases; and

(J) explain the transfer of energy through a food chain and its relationship to human nutrition.

(15) The student describes the basic nutrients and their specific properties as related to food science. The student is expected to:

(A) identify the recommended daily allowances of the basic nutrients;

(B) list the five main nutrients and food sources of each;

(C) explain the use of the five main nutrients in relation to the Food Guide Pyramid and/or the Dietary Guidelines; and

(D) discuss the importance of fiber in the diet.

(16) The student identifies properties of carbohydrates. The student is expected to:

(A) explain the chemical reaction that occurs when plants produce carbohydrates;

(B) define monosaccharides and disaccharides and name examples of each;

(C) describe the regulation of glucose in the blood and the conditions resulting from low and high glucose levels;

(D) explain sugar hydrolysis and list the products of the hydrolysis of sucrose and lactose;

(E) discuss the process of caramelization;

(F) compare the structures of amylose and amylopectin and how these structures affect cooking properties; and

(G) describe gelatinization, paste, retrogradation, and syneresis.

(17) The student describes the properties of fats and lipids. The student is expected to:

(A) compare the properties of saturated and unsaturated fatty acids;

(B) identify foods containing triglycerides and identify which foods contain saturated and unsaturated fat;

(C) discuss the function of fat in food preparation;

(D) describe ways lipid oxidation can be controlled in food;

(E) describe the functions of fat in the body;

(F) explain the role of fat in maintaining optimum health;

(G) explain the role of cholesterol in maintaining optimum health;

(H) contrast the properties of saturated and unsaturated fats; and

(I) describe the effects of temperature on fats in food preparation.

(18) The student describes the properties of proteins and amino acids. The student is expected to:

(A) name the groups of elements that identify an amino acid;

(B) describe the chemical structure of protein;

(C) explain what happens during the denaturation of protein and how the process occurs;

(D) describe ways in which protein is used in food preparation;

(E) discuss the composition of eggs and their storage requirements;

(F) list factors that affect the stability of an egg foam;

(G) identify the functions of protein in the body; and

(H) compare and contrast complete and incomplete proteins.

(19) The student understands the coagulation and coalescence processes associated with milk protein and cheese. The student is expected to:

(A) list the components of milk and explain how each component is dispersed in the milk;

(B) describe what happens when milk protein is coagulated;

(C) discuss the processing of milk and how it is treated when it is pasteurized, homogenized, and fortified;

(D) compare and contrast skim milk, low-fat milk, whole milk, half-and-half, and various creams;

(E) explain the differences between evaporated milk, condensed milk, and dried milk;

(F) identify factors that affect the ability of cream to form a foam;

(G) explain the changes that occur when milk is heated; and

(H) describe the process of making a fermented or cultured milk product and list examples of these products.

(20) The student analyzes the properties of vitamins and minerals. The student is expected to:

(A) discuss the functions of vitamins and minerals in the body;

(B) describe water- and fat-soluble vitamins and list the main vitamins in each category;

(C) explain why megadoses of fat-soluble vitamins can be toxic;

(D) analyze the food sources for each vitamin and mineral;

(E) analyze deficiency diseases and explain their causes;

(F) explain the difference and list examples of major and trace minerals; and

(G) explain the interrelationships among nutrients.

(21) The student explains the properties of water. The student is expected to:

(A) identify the properties of water that make it a polar molecule;

(B) describe hydrogen bonds and how they differ from covalent bonds;

(C) discuss the differences between hard and soft water;

(D) compare the heat of fusion and the heat of vaporization;

(E) explain the functions of water in food preparation; and

(F) identify the functions of water in the body.

(22) The student analyzes the food irradiation process. The student is expected to:

(A) list the steps in the food irradiation process;

(B) define the units used to measure the amount of radiation used during the irradiation process; and

(C) describe the effects of irradiation on food.

(23) The student discusses United States Department of Agriculture (USDA) packaging guidelines. The student is expected to:

(A) research food packaging guidelines established by the USDA;

(B) explain the rationale and purposes of those guidelines;

(C) describe properties of containers needed for commercial food packaging;

(D) identify factors related to the successful use of controlled-atmosphere packaging; and

(E) describe information required on a food label.

(24) The student analyzes the food dehydration process. The student is expected to:

(A) describe the principles and purposes of dehydration;

(B) describe methods of dehydration and explain their similarities and differences;

(C) explain why food is pretreated before dehydrating;

(D) compare sulfating, sulfuring, and blanching;

(E) describe types of blanching that can be used as pretreatment methods; and

(F) discuss the role of air temperature and movement in successful dehydration.

(25) The student analyzes the food canning process. The student is expected to:

(A) identify safety practices and equipment used in home and commercial canning;

(B) describe hot-pack, cold-pack, and pressure canning;

(C) identify advantages and disadvantages of each canning method;

(D) identify types of food that should be processed by each canning method; and

(E) compare heat transfer by conduction and by convection in canning.

(26) The student analyzes the food freezing process. The student is expected to:

(A) list the steps of the food freezing process;

(B) identify factors needed for successful freezing of food; and

(C) identify advantages and disadvantages of freezing food.

(27) The student understands the importance of developing lifelong skills. The student is expected to:

(A) demonstrate the use of oral and written communication skills such as writing technical reports, letters, and memos; communicating technical information to a nontechnical audience; and making formal and informal presentations;

(B) define a problem, identify potential causes and possible solutions, and make thoughtful recommendations;

(C) apply critical-thinking skills to new situations;

(D) demonstrate the highest standards of professional integrity and ethical values;

(E) work and interact with individuals from diverse cultures;

(F) explain the skills necessary for lifelong learning;

(G) work effectively with others;

(H) provide leadership in a variety of situations;

(I) deal with individual or group conflicts;

(J) research scientific and nonscientific information;

(K) competently use library resources;

(L) manage time effectively;

(M) facilitate group projects;

(N) handle multiple tasks and pressures; and

(O) prepare for a state or national food manager's sanitation certification or alternative credential within the field of food science technology.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902122

Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 475-1497



## SUBCHAPTER J. HUMAN SERVICES

### 19 TAC §§130.241 - 130.253

The State Board of Education (SBOE) proposes new §§130.241-130.253, concerning the Texas essential knowledge and skills (TEKS) for human services. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school

students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.241. Implementation of Texas Essential Knowledge and Skills for Human Services.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.242. Principles of Human Services (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) Introduction.

(1) This laboratory course will enable students to investigate careers in the human services career cluster, including counseling and mental health, early childhood development, family and community, and personal care 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.

(2) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) 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) establish measurable short- and long-term goals for personal and professional life;

(C) describe personal management skills needed for productivity such as time and energy;

(D) practice ethical and appropriate methods of conflict resolution;

(E) analyze the significance of grooming and appearance in personal and professional settings;

(F) assess the relationship of wellness to achievement;

(G) determine personal and occupational implications of substance abuse;

(H) evaluate appearance in personal and professional settings;

(I) apply clothing selection, maintenance, and repair skills to enhance career opportunities;

(J) practice leadership skills; and

(K) demonstrate effective communication skills.

(2) The student demonstrates the skills necessary to enhance personal and career effectiveness in counseling and mental health services. The student is expected to:

(A) determine types of crises;

(B) determine appropriate responses, management strategies, and technology available to meet individual and family needs;

(C) determine effects of crisis on individuals and families;

(D) determine crises typical of various stages of the life cycle;

(E) identify the contributing factors and describe the impact of stress on individuals and relationships;

(F) investigate causes, prevention, and treatment of domestic and relationship 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.

(3) 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) evaluate 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 interests.

(4) 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) describe rewards, demands, and future trends in family and community services;

(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) analyze dietary practices across the life span; and

(I) identify employment and entrepreneurial opportunities and preparation requirements in the areas of personal interests.

(5) 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, 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 interests.

§130.243. Dollars and Sense (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Human Services.

(b) Introduction. Dollars and Sense focuses on consumer practices and responsibilities, the money management process, decision-making skills, impact of technology, and preparation for human services careers. Students are encouraged to participate in career and technical student organizations and other leadership organizations.

(c) 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 foods, 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 budgeting, expense records, and maintaining 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 bank accounts available to consumers and the benefits of maintaining a bank account;

(H) demonstrate the ability to balance a check book;

(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 government 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 integrates knowledge, skills, and practices required for careers in family and community services. The student is expected to:

(A) explain the roles and functions of individuals engaged in family and community services careers;

(B) analyze opportunities for employment and entrepreneurial endeavors;

(C) summarize education and training requirements for family and community services careers; and

(D) investigate professional organizations for family and community services.

§130.244. *Interpersonal Studies (One-Half to One Credit).*

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Human Services.

(b) Introduction.

(1) This course 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.

(2) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) 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-term 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 functions and roles of 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 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 effects 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 careers in counseling and mental health services. The student is expected to:

(A) determine employment and entrepreneurial opportunities and preparation requirements for careers in the field of counseling and mental health services;

(B) determine how interests, abilities, and personal priorities affect career choice; and

(C) propose short-term and long-term career goals.

(12) The student exhibits employability skills. 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 facilitating individuals assuming 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.

§130.245. Lifetime Nutrition and Wellness (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Human Services, Principles of Hospitality and Tourism, Principles of Health Science, or Principles of Education and Training.

(b) Introduction.

(1) This laboratory course 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.

(2) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) Knowledge and skills.

(1) The student understands the role of nutrients in the body. The student is expected to:

(A) classify nutrients, 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; and

(K) examine and explain nutritional serving sizes.

(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 demonstrating cooperation and responsibility;

(B) apply effective practices for managing time and energy to complete tasks on time; and

(C) practice problem solving using leadership and teamwork skills.

(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-term and long-term career goals; and

(C) analyze entrepreneurial opportunities in nutrition.

§130.246. Counseling and Mental Health (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Principles of Human Services.

(b) Introduction. 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.



(c) Knowledge and skills.

(1) The student applies mathematics, science, English language arts, and social studies in health science. 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 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 Mental Health and Mental Retardation.

(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.

§130.247. Child Development (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Human Services.

(b) Introduction.

(1) This technical laboratory course addresses knowledge and skills related to child growth and development from prenatal through school-age children, equipping students with child development skills. 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.

(2) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) Knowledge and skills.

(1) The student analyzes roles and responsibilities of parenting. The student is expected to:

(A) investigate parenting skills and responsibilities, including child support and other legal rights and responsibilities that come with parenthood;

(B) analyze relationship skills, including money management, communication skills, and marriage preparation;

(C) examine skills relating to the prevention of family violence;

(D) demonstrate first aid and cardiopulmonary resuscitation skills;

(E) assess the safety of purchases for children such as cribs, toys, clothing, and food; and

(F) explain factors that contribute to literacy.

(2) The student investigates components of optimal prenatal care and development. The student is expected to:

(A) identify signs and stages of pregnancy;

(B) analyze environmental and hereditary factors affecting fetal development such as Mendel's Laws of Inheritance, genetics, and substances and how they affect the developing child and prenatal brain development;

(C) describe nutritional needs prior to and during pregnancy such as impact of proteins, lipids, and carbohydrates on fetal brain development;

(D) analyze reasons for medical care and good health practices prior to and during pregnancy;

(E) critique technological advances on prenatal care and development such as sound waves used for sonograms, amniocentesis, and alpha-fetoprotein test; and

(F) analyze the process of labor and delivery.

(3) The student investigates strategies for optimizing the development of infants of diverse backgrounds, including those with special needs. The student is expected to:

(A) explain the physical, emotional, social, and intellectual needs of the infant;

(B) generate ideas and gather information relevant to care and protection of infants such as child care options, abuse, guidance, services and agencies, immunizations, and appropriate health care;

(C) draw conclusions regarding the impact of the infant on the family in areas such as roles, finances, responsibilities, and relationships;

(D) identify typical growth and development of infants such as brain development and mental health;

(E) select and use appropriate standard international units to identify nutritional needs for infants such as caloric requirements, protein, lipids, carbohydrates, and portion control;

(F) research the advantages of breast feeding; and

(G) describe and apply technical knowledge and skills required to be successful in careers involving infants such as neonatal intensive care specialist and infant mental health specialist.

(4) The student investigates strategies for optimizing the development of toddlers of diverse backgrounds, including those with special needs. The student is expected to:

(A) analyze the physical, emotional, social, and intellectual needs of the toddler;

(B) create play activities for a toddler's growth and development such as mathematics, science, physical movement, outdoor play, art, and music;

(C) identify patterns of typical growth and development of toddlers;

(D) identify community resources relevant to the care and protection of toddlers, including child care services, health care services, and organizations such as the National Association for the Education of Young Children; and

(E) work independently or collaboratively to prepare snacks or meals that meet nutritional guidelines for toddlers such as caloric, proteins, lipids, carbohydrates, and portion control.

(5) The student analyzes the growth and development of preschool children of diverse backgrounds, including those with special needs. The student is expected to:

(A) analyze the physical, emotional, social, and intellectual needs of the preschool child;

(B) describe the role of play in a preschool child's growth and development;

(C) develop activities for meeting developmental needs of preschool children such as moderate to vigorous physical exercise, reading development, communication, listening skills, and self-reliance;

(D) use complex inferences from text to support conclusions about care and protection of preschool children such as child care, family violence and abuse, guidance, services and agencies, and appropriate health care;

(E) work independently and collaboratively to prepare snacks or meals to meet nutritional guidelines such as caloric requirements, proteins, lipids, carbohydrates, and portion control; and

(F) identify appropriate licensing regulations for preschools.

(6) The student analyzes the growth and development of school-age children of diverse backgrounds, including those with special needs. The student is expected to:

(A) analyze the physical, emotional, social, and intellectual needs of the school-age child;

(B) analyze the role of the school environment on the growth and development of the school-age child;

(C) analyze how individual and group identities are established and change over time to identify typical growth and development of the school-age child such as brain development and social, emotional, and physical development;

(D) investigate care and protection of school-age children such as child care, abuse, guidance, services and agencies, immunizations, and appropriate health care;

(E) develop activities appropriate for school-age children such as moderate to vigorous physical exercise, reading development, communication, listening skills, independence, conflict resolution, stress management, and self-discipline;

(F) work independently or collaboratively to create nutritious snacks or meals appropriate for school-age children to prepare, including considerations such as caloric requirements, proteins, lipids, carbohydrates, and portion control;

(G) explore careers involving school-age children;

(H) discuss legislation and public policies affecting children; and

(I) propose short-term and long-term career goals in child development.

§130.248. Child Guidance (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Principles of Human Services and Child Development.

(b) Introduction.

(1) This technical laboratory course 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.

(2) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) Knowledge and skills.

(1) The student analyzes roles and responsibilities of caregivers. The student is expected to:

(A) determine the roles and responsibilities of caregivers related to the physical, intellectual, emotional, and social development of children;

(B) apply ethical codes of conduct to positive role modeling behaviors;

(C) identify strategies for optimizing the physical, intellectual, emotional, and social development of children, including those with special needs;

(D) write with proper voice, tense, and syntax, assuring it conforms to standard English, in creating examples of coherent written communication between parents and children;

(E) investigate the legal responsibilities and laws involved in caring for children;

(F) analyze the impact of changing societal patterns and demographics on the role of parents, children, and other family members;

(G) access resources available for effective management of multiple adult roles that affect child care;

(H) investigate parenting skills and responsibilities, including child support and other legal rights and responsibilities that come with parenthood;

(I) analyze relationship skills, including money management, communication skills, and marriage preparation; and

(J) examine skills relating to the prevention of family violence.

(2) The student analyzes child care options. The student is expected to:

(A) compare child care options for children of various ages;

(B) compare and contrast the financial considerations of child care options;

(C) examine criteria for selecting quality child care; and

(D) 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) identify signs of good health and symptoms of illness in children;

(B) describe child guidance practices that contribute to the health and wellness of children such as requirements for rest, exercise, obesity prevention, public and personal safety, and sanitation;

(C) apply safe procedures in creating environments for children;

(D) prepare nutritious snacks or meals for children following the food guidelines in promoting children's health such as portion control, caloric requirements, and nutrient needs;

(E) determine resources available for managing the health care of children such as children's insurance, Children's Health Insurance Program, and county health clinics;

(F) recognize symptoms of children in family crisis situations; and

(G) discuss society's role in the protection of children and families.

(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;

(B) describe characteristics and safety features of developmentally appropriate play activities, toys, and equipment for children;

(C) describe strategies caregivers may use to encourage constructive and creative play;

(D) determine potential uses and management of technology, media, and resources to foster healthy child development; and

(E) determine safeguards to prevent misuse and abuse of technology and media with children.

(5) The student summarizes appropriate guidance techniques for children of various ages and developmental levels. The student is expected to:

(A) identify the various types of guidance and the effects on children;

(B) determine appropriate guidance techniques;

(C) explain behaviors that may lead to child abuse; and

(D) identify strategies that deter abusive behavior.

(6) 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 care giving;

(B) propose short-term and long-term career goals;

(C) assess personal interests, aptitudes, and abilities needed in the child-care profession;

(D) exhibit employability skills such as communication, problem solving, leadership, teamwork, ethics, and technical skills;

(E) demonstrate effective verbal, nonverbal, written, and electronic communication skills;

(F) demonstrate skills and characteristics of leaders and effective team members; and

(G) evaluate employment and entrepreneurial opportunities and educational requirements for early childhood development and services.

§130.249. Family and Community Services (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Principles of Human Services.

(b) Introduction.

(1) This laboratory-based course is designed to involve students in realistic and meaningful community-based activities through direct service experiences. Students are provided opportunities to interact 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.

(2) Students are encouraged to participate in extended learning experiences such as career and technical student organizations or other leadership or extracurricular organizations.

(c) Knowledge and skills.

(1) The student explores careers in family services. The student is expected to:

(A) identify family services;

(B) investigate career options available that focus on families;

(C) research to find agencies, organizations, and churches offering family services in the student's area; and

(D) analyze demographic and community needs.

(2) The student demonstrates organizational and leadership skills using a community service environment. The student is expected to:

(A) demonstrate management practices facilitating individuals assuming multiple family, community, and wage-earner roles;

(B) evaluate personal leadership characteristics;

(C) develop a plan for positively enhancing personal leadership characteristics;

(D) demonstrate positive interpersonal skills, including conflict resolution, negotiation, teamwork, and leadership;

(E) evaluate and identify effective strategies and skills necessary to establish a collaborative relationship with others in community service settings; and

(F) plan and deliver focused and coherent presentations that convey clear and distinct perspective and demonstrate solid reasoning.

(3) The student develops and implements community service activities. The student is expected to:

(A) identify service projects applicable to a community;

(B) integrate student interest, abilities, and skills with appropriate community service projects;

(C) plan, develop, and implement volunteer activities that will benefit individuals, families, or the community;

(D) generate ideas and gather information relevant to a family and community services project keeping careful records of outside sources;

(E) demonstrate proficient use of volunteer skills;

(F) demonstrate safety practices related to community service or volunteer activities;

(G) demonstrate increasing ability to perform higher-order thinking skills through organizing and performing community service;

(H) practice techniques to ensure completion of a community service project;

(I) cite evidence of personal development through performing community service activities; and

(J) evaluate the effectiveness of implemented activities.

(4) The student analyzes factors influencing employability skills. The student is expected to:

(A) evaluate interests, abilities, and personal priorities related to career choices;

(B) apply the decision-making process to career selection;

(C) demonstrate effective verbal, nonverbal, and written communication skills;

(D) demonstrate positive human relations skills;

(E) demonstrate appropriate grooming, appearance, and etiquette for volunteer activities;

(F) exhibit ethical practices as defined for designated volunteer activities;

(G) describe community service experiences that contribute to career preparation;

(H) analyze future trends in community service;

(I) determine employment and entrepreneurial opportunities related to community service; and

(J) design a public relations campaign promoting volunteer activities.

(5) The student applies rigorous academic standards in implementing community service activities. The student is expected to:

(A) use effective reading strategies to evaluate topics from professional publications in family and community services;

(B) listen actively and effectively in all communication situations; and

(C) define the concept of socialization and analyze the role socialization plays in human development and behavior.

§130.250. Practicum in Human Services (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12.

(b) Introduction.

(1) Practicum in Human Services provides occupation-specific training and 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 as well as the essential knowledge and skills described in subsection (c) of this section for communication, critical thinking, problem solving, information technology, ethical and legal responsibilities, leadership, teamwork, and entrepreneurship.

(2) Instruction may be delivered through school-based laboratory training or through work-based delivery arrangements such as cooperative education, mentoring, and job shadowing.

(3) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(c) 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 resumé;

(C) create an employment portfolio for use when applying for internships and work-based learning opportunities 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) discuss human services research findings in everyday language keeping instruction at an appropriate level;

(B) practice effective verbal, nonverbal, written, and electronic communication skills;

(C) use communication skills such as ability to empathize, motivate, listen attentively, speak courteously and respectfully, defuse client's anger or skepticism, resolve conflicting interests, and respond to client objections or complaints to the client's satisfaction;

(D) apply client service techniques to complete transactions such as managing and defusing objections with courtesy, persuading the client to agree with an acceptable transaction, facilitating client's follow-through with the transaction, and maintaining client relationship as client returns for services and refers others;

(E) evaluate client resources versus product costs and client risk tolerance level such as evaluating client resources versus cost, educating client about most beneficial choices, and recommending best products, plans, or services for the client;

(F) consult with colleagues or those knowledgeable in a field of expertise when needed to expedite solutions to problems such as referring a client to others if the client will be better served; and

(G) develop client recommendations using appropriate strategies such as analyzing client's assets and evaluating and choosing options for maximum return and minimum risk.

(3) The student uses business tools or procedures to create human services information and facilitate client interactions. The student is expected to:

(A) manage numerical information such as using a calculator to add, subtract, multiply, or divide accurately;

(B) perform complex calculations accurately;

(C) use appropriate electronic resources to access current information;

(D) use word-processing, database, spreadsheet, or presentation software to manage data;

(E) practice email applications to communicate within a workplace; and

(F) use specialized software to prepare needed documents accurately.

(4) The student identifies how key organizational systems affect organizational performance and the quality of products and services. The student is expected to:

(A) examine global context and all aspects of industries and careers;

(B) apply principles of planning, design, development, and evaluation to accomplish long-range goals; and

(C) implement quality-control systems and practices to ensure quality products and services.

(5) The student establishes a physically and psychologically healthy environment to inspire client confidence in services provided. The student is expected to:

(A) identify locations suitable to offer human services safely such as accessibility to transportation, safety, and security of the location;

(B) incorporate a functional work environment, equipment needs, and required utilities for offering human services;

(C) create a psychologically suitable environment such as implementing elements of a non-threatening environment or using social skills needed for a diverse population;

(D) employ emergency procedures as necessary to provide aid in workplace accidents; and

(E) employ knowledge of response techniques to create a disaster and emergency response plan.

(6) The student uses leadership and teamwork skills in collaborating with others. The student is expected to:

(A) use leadership and teamwork skills in collaborating 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 to assure the best interests of clients. The student is expected to:

(A) model behaviors that demonstrate stewardship of client assets such as providing beneficial help and suggestions to clients, evaluating when a client needs an advocate, and following through with meeting these needs;

(B) model ethical behaviors in the relationship with human services clients such as offering prompt, honest, and efficient services; protecting clients from fraud, deceit, or misrepresentation; immediately disclosing any conflicts of interest; and making recommendations for service based on the preferences and needs of the client; 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 customers using appropriate and relevant information.

(9) The student documents technical knowledge and skills. The student is expected to:

(A) update 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) resumé;

(vii) samples of work; and

(viii) evaluation from the practicum supervisor; and

(B) present the portfolio to all interested stakeholders such as in a slide or poster presentation.

§130.251. Introduction to Cosmetology (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-10.

(b) Introduction. Students explore areas such as bacteriology, sterilization and sanitation, hair styling, manicuring, shampooing and the principles of hair cutting, hair styling, hair coloring, skin care, and facial makeup. The student researches careers in the personal care services industry. To prepare for success, students must have skills relative to this industry, as well as academic knowledge and skills. Students may begin to earn clock hours toward state licensing requirements.

(c) Knowledge and skills.

(1) The student implements the employability characteristics of a successful worker in the workplace. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and preparation requirements in the field of cosmetology services;

(B) investigate technical knowledge and skills required to be successful in careers in the personal care services area; and

(C) interpret patterns of current information and resources on personal care services to attract new clientele and satisfy and retain present clientele.

(2) The student applies academic skills to the field of cosmetology. The student is expected to:

(A) identify principles of biology, tissues, and cells to provide and select safe and effective personal care products and services;

(B) relate principles of chemistry by explaining the composition, structure, and properties of substances and of chemical processes to provide a broad range of personal care services;

(C) recognize principles of human anatomy to classify areas of potential problems in order to provide needed personal care services;

(D) investigate organizational policies, procedures, and regulations to establish personal care organization priorities to accomplish the mission and provide high-quality service to a diverse set of clients;

(E) compare economic and accounting principles and practices when providing personal care services to promote business success and growth; and

(F) critique leadership skills within a community setting to maintain positive relationships that enhance personal care business opportunities.

(3) The student demonstrates knowledge of the rules and regulations established by the governing body and industry standards. The student is expected to:

(A) identify and practice emergency policies and procedures regarding health and safety to achieve a safe and healthy environment at all times; and

(B) recognize risks and potentially hazardous situations to maintain a clean safety record when providing personal care services.

(4) The student describes the function and application of the tools, equipment, technologies, and materials used in cosmetology. The student is expected to:

(A) identify and choose techniques and principles and safely use tools and instruments to develop efficient and safe delivery of client services that enhance client satisfaction;

(B) research client information to attract new clientele and retain present clientele; and

(C) interpret systems needed to obtain the range of personal care resources needed for business practice and to access resources at appropriate times.

(5) The student experiments with the concepts and skills of the profession to simulated and actual work situations. The student is expected to:

(A) model ethical and legal conduct while working in the human services industry;

(B) demonstrate actions that comply with legal requirements for personal liability to guide personal conduct in the human services setting;

(C) explore administrative and clerical procedures and systems to provide client satisfaction;

(D) propose advertising principles when selecting and using media to attract and retain clientele; and

(E) apply technology to analyze data and information in order to make appropriate recommendations for personal care services.

§130.252. Cosmetology I (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 10-11. Recommended prerequisite: Introduction to Cosmetology.

(b) Introduction. 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, haircare, nail care, and skin care and meets the

Texas Department of Licensing and Regulation requirements for licensure upon passing the state examination. Analysis of career opportunities, requirements, expectations, and development of workplace skills are included.

(c) Knowledge and skills.

(1) The student investigates the employability characteristics of a successful worker in the workplace. The student is expected to:

(A) integrate organizational policies, procedures, and regulations to establish personal care organization priorities; accomplish the mission; and provide high-quality service to a diverse set of clients;

(B) employ leadership skills within a community setting to maintain positive relationships that enhance personal care business opportunities;

(C) compare cost-effective resources to assist with planning and delivery of services;

(D) apply the technical knowledge and skills required to be successful in careers in the personal care service area; and

(E) justify time-management principles and techniques to achieve objectives and efficiently serve clients.

(2) The student combines academic skills with cosmetology requirements. The student is expected to:

(A) apply principles of biology, identifying living tissues, cells, and organisms to provide and select safe and effective personal care products and services;

(B) classify and apply principles of chemistry and explain the composition, structure, and properties of substances and of chemical processes to provide a broad range of personal care services;

(C) examine and apply basic principles of human anatomy to determine areas of potential problems and provide customized personal care services; and

(D) appraise marketing principles when selecting and using media to attract and retain clientele.

(3) The student applies the rules and regulations established by the Texas Department of Licensing and Regulation. The student is expected to:

(A) review and implement emergency policies and procedures regarding health and safety;

(B) research risks and potentially hazardous situations to maintain a clean record of safety when providing personal care services; and

(C) perform at least one-third of practical applications as required by the Texas Department of Licensing and Regulation or the governing body.

(4) The student describes the function and operates the tools, equipment, technologies, human resources, and materials used in cosmetology. The student is expected to:

(A) locate and compare vendor and sole-source provider resources to maximize benefits for personal care clients, businesses, or organizations;

(B) plan the range of personal care resources needed for business practice in order to access resources at appropriate times; and

(C) plan and maintain the range of human resources needed for efficient business practice.

(5) The student integrates the academic and technical knowledge and skills for cosmetology to simulated and actual work situations. The student is expected to:

(A) analyze and guide individuals in recognizing concerns and making informed decisions to select personal care services;

(B) create an individualized plan that reflects client preferences, needs, and interests in order to follow a course of treatment or action;

(C) apply time-management principles and techniques to achieve objectives and effectively serve clients;

(D) review client satisfaction with solutions, procedures, and products to enhance future services and interactions;

(E) implement ethical and legal conduct while working in the personal care industry; and

(F) execute actions that comply with legal requirements for personal liability to guide personal conduct in the personal care services setting.

§130.253. Cosmetology II (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Cosmetology II.

(b) Introduction. Students review academic knowledge and skills related to cosmetology. This course is designed to provide advanced training for employment in cosmetology careers. Instruction includes advanced training in sterilization and sanitation processes, haircare, nail care, and skin care and meets the Texas Department of Licensing and Regulation requirements for licensure upon passing the state examination. Students apply, combine, and justify knowledge and skills to a variety of settings and problems.

(c) Knowledge and skills.

(1) The student consolidates the employability characteristics of a successful worker in the workplace. The student is expected to:

(A) evaluate leadership skills within a community setting to maintain positive relationships that enhance personal care business opportunities;

(B) estimate cost-effective resources to assist with planning the delivery of services;

(C) review technical knowledge and skills required to be successful in careers in the human services area;

(D) assess time-management principles and techniques to achieve objectives and effectively serve clients;

(E) create and maintain records, including electronic records, of client services using safeguarding procedures to store and retrieve personal care client information;

(F) integrate logical reasoning in a variety of ethical workplace situations in order to make sound decisions; and

(G) assess written organizational policies and procedures to help employees perform their jobs according to employer rules and expectations.

(2) The student consolidates academic skills to satisfy the requirements of cosmetology. The student is expected to:

(A) apply and defend principles of biology, identifying living tissues, cells, and organisms to provide and select safe and effective personal care products and services;

(B) merge principles of chemistry, explaining the composition, structure, and properties of substances and of chemical processes to provide a broad range of personal care services;

(C) design needed services based on the basic principles of human anatomy in order to provide needed personal care services; and

(D) critique marketing principles when selecting and using media to attract and retain clientele.

(3) The student implements rules and regulations established by the Texas Department of Licensing and Regulation. The student is expected to:

(A) apply and defend emergency policies and procedures regarding health and safety;

(B) evaluate risks, including potentially hazardous situations, to maintain a clean record of safety when providing personal care services; and

(C) perform and complete all practical requirements as required by the Texas Department of Licensing and Regulation or the governing body.

(4) The student categorizes and judges both the function and application of the tools, equipment, technologies, and materials used in cosmetology. The student is expected to:

(A) examine and rank vendor resources to provide maximum benefit for clients, service providers, businesses, or organizations;

(B) justify systems needed to obtain the range of personal care resources needed for business practice and explain how to access resources at appropriate times;

(C) use technology resources to analyze data and information in order to make appropriate recommendations and conclusions for personal care services;

(D) evaluate techniques, principles, tools, and instruments used to develop efficient and safe delivery of client services to enhance client satisfaction;

(E) explore principles of mechanics when choosing, evaluating, and maintaining service equipment to provide continued client services and examine emerging technologies;

(F) critique administrative or clerical procedures and systems to provide client satisfaction; and

(G) consolidate various methods of obtaining feedback from clients to understand their expectations and promote high-quality standards.

(5) The student merges the concepts and skills of cosmetology to simulated and actual work situations. The student is expected to:

(A) design personal care services for individuals by recognizing and making informed decisions according to client needs and concerns;

(B) create an individualized plan that reflects client preferences, needs, and interests in order to create a course of treatment or action;

(C) evaluate client satisfaction by identifying solutions, procedures, and products to enhance future services and client interactions;

(D) implement organizational policies, procedures, and regulations to establish personal care organization priorities, accomplish an identified mission, and provide high-quality service to diverse clients;

(E) investigate and evaluate industry trends, information, and resources to attract new clientele and satisfy and retain present clientele; and

(F) synthesize client information to attract new clientele and retain present clientele.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

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## SUBCHAPTER K. INFORMATION TECHNOLOGY

### 19 TAC §§130.271 - 130.280

The State Board of Education (SBOE) proposes new §§130.271-130.280, concerning the Texas essential knowledge and skills (TEKS) for information technology. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn



a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.271. Implementation of Texas Essential Knowledge and Skills for Information Technology.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.272. Principles of Information Technology (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-10.

(b) Introduction. Students develop computer literacy skills to adapt to emerging technologies used in the global marketplace. Students implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. Students enhance reading, writing, computing, communication, and reasoning skills and apply them to the information technology environment.

(c) Knowledge and skills.

(1) The student demonstrates the necessary skills for career development, employability, and successful completion of course outcomes. The student is expected to:

(A) identify and demonstrate positive 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 skill;

(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 information technology; and

(I) demonstrate planning and time-management skills such as project management and storyboarding.

(2) The student identifies various employment opportunities in the information technology 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 understanding of the functions of resumés and portfolios.

(3) The student uses emerging technologies to exchange information. The student is expected to:

(A) identify and describe functions of various new 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) dissect and 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 Internet security protocols such as computer viruses, online predators, hacking, and identity theft;

(G) define and identify unethical practices such as hacking, phone fraud, online piracy, and data vandalism; and

(H) demonstrate ethical use of Internet and online resources, including citation of source.

(4) The student demonstrates knowledge of the hardware components associated with information systems. The student is expected to:

(A) identify the different computer classifications such as minicomputer, mainframe, and microcomputer;

(B) identify major hardware components and their functions such as the central processor unit, input and output peripherals, and storage systems and devices;

(C) use available reference tools such as user manuals, both online and written, as appropriate;

(D) demonstrate understanding of the process of connecting peripheral devices; and

(E) demonstrate proficiency in the use of a variety of input devices such as mouse, keyboard, microphone, digital camera, printer, scanner, and optical disk reader.

(5) 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 understand major operating system fundamentals and components;

(C) identify the function and operation of compilers and interpreters;

(D) identify various computer languages and how the languages are used in software development;

(E) recognize data representation in software development such as string, numeric, character, integer, and date;

(F) demonstrate understanding of file extensions and the purpose of file types across software products;

(G) recognize computer numbering systems and internal data representation;

(H) identify appropriate use of application software;

(I) identify new and emerging classes of software;

(J) identify open source and proprietary licenses;

(K) demonstrate proper use of system management tools; and

(L) demonstrate proper file management techniques such as creating, naming, organizing, copying, moving, and deleting files.

(6) The student analyzes network systems. The student is expected to:

(A) identify hardware associated with telecommunications and data networking such as servers, routers, switches, hubs, and network connectors;

(B) identify and describe various types of networks such as peer-to-peer, local area networks, wide area networks, wireless token ring, and Ethernet;

(C) identify and describe functions of network operating systems; and

(D) explain troubleshooting techniques for various network connection issues.

(7) The student applies word-processing technology. The student is expected to:

(A) identify the terminology associated with word-processing software and its functions;

(B) improve the touch-system skill using the keyboard and keypad to input data;

(C) edit a variety of text documents using functions such as pagination, appropriate white space, tab settings, and font style, size, and color;

(D) create professional letters using advanced word-processing features;

(E) apply formatting techniques to a multipage research paper using approved publication standards such as American Psychological Association and Modern Language Association;

(F) produce desktop publishing documents incorporating both text and graphics such as business cards, newsletters with mastheads, and advertisement flyers; and

(G) demonstrate file protection and security.

(8) The student applies spreadsheet technology. The student is expected to:

(A) identify the terminology associated with spreadsheet software and its functions;

(B) format and organize numerical content to perform mathematical processes such as addition, subtraction, multiplication, and division; percentages and decimals; and order of operations principle;

(C) employ both student-created formulas and preprogrammed functions to produce documents such as budget, payroll, statistical tables, and personal checkbook register;

(D) create and analyze spreadsheets incorporating advanced features such as lookup tables, nested IF statements, subtotals, cell protection conditional formatting, charts, and graphs; and

(E) edit a variety of spreadsheets by performing data management procedures using simple and multiple search parameters to locate, sort, search, and filter data.

(9) The student applies database technology. The student is expected to:

(A) identify the terminology associated with database software and its functions;

(B) create, populate, edit, maintain, and save database files;

(C) differentiate the nature and interrelationships of fields and records;

(D) perform data management procedures such as locating, sorting, searching, querying, organizing, and outputting data;

(E) use data management procedures using multiple search parameters; and

(F) produce organized reports with calculated figures.

(10) The student applies presentation management technology. The student is expected to:

(A) identify the terminology associated with presentation software and its functions;

(B) create, save, edit, and produce presentations with appropriate handouts and speaker notes; and

(C) create a non-linear presentation incorporating 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 editing software and its functions;

(B) identify the terminology associated with interactive media;

(C) identify and describe design principles such as contrast, repetition, alignment, and proximity;

(D) identify and describe types and styles of typeface used for publications such as serif and sans serif; and

(E) create a web page containing links, graphics, and text.

(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) demonstrate ethical use of online resources;

(B) adhere to copyright rules and regulations;

(C) differentiate between copyright and trademarks;

(D) explain the concept of intellectual property;

(E) examine the consequences of plagiarism; and

(F) describe the function of a non-disclosure agreement.

§130.273. Computer Maintenance (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Information Technology.

(b) Introduction. Students acquire principles of computer maintenance, including electrical and electronic theory, computer hardware principles, and broad level components related to the installation, diagnosis, service, and repair of computer systems. To prepare for success, students must have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems.

(c) Knowledge and skills.

(1) The student demonstrates the necessary skills for career development, employability, and successful completion of course outcomes. The student is expected to:

(A) identify and demonstrate positive 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 information technology; and

(I) demonstrate planning and time-management skills such as project management and storyboarding.

(2) The student identifies various employment opportunities in the information technology 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) examine the role of certifications, resumés, and portfolios in the information technology profession.

(3) 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;

(B) complete work orders for repair and installation;

(C) estimate supplies, materials, and labor costs for installation, maintenance, and repair work orders; and

(D) interpret appropriate documentation such as schematics, drawings, charts, diagrams, technical manuals, and bulletins.

(4) The student acquires an understanding of computer technologies. The student is expected to:

(A) explain the fundamentals of microprocessor theory;  
(B) define the use of Boolean 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, analog, and 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; and

(I) explain computer system environmental requirements and related control devices.

(5) The student knows 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) 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 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 design;

(C) identify the operational features and proper terminology related to computer systems;

(D) identify 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.

(7) The student uses hardware design, operation, and maintenance knowledge and skills to provide computer support. 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 the operation of mobile devices such as personal data assistants and cell phones;

(C) identify how mobile devices such as personal data assistants and cell phones connect and share data;

(D) assemble and install a basic computer system; and

(E) install and configure computer components and peripherals.

(8) The student uses troubleshooting skills with hardware knowledge to solve client problems. The student is expected to:

(A) understand the rationale behind error messages and symptoms of hardware failures;

(B) know interrupt sequences and beep codes;

(C) identify priorities and interrupts at the system level;

(D) test system using diagnostic tools and software;

(E) identify problems in the operating systems;

(F) differentiate between hardware and software failure;

(G) update flash memory;

(H) demonstrate hard drive maintenance procedures such as defrag scan and clear caches;

(I) gather information from user;

(J) repair malfunctioning hardware systems;

(K) reinstall software as needed;

(L) demonstrate backup and recovery; and

(M) restore a system to various states such as safe modes and previous.

(9) The student demonstrates and applies knowledge of operating system design, including operation and maintenance, to perform information support and service tasks. The student is expected to:

(A) explain the fundamentals of an operating system; and

(B) compare and contrast different operating systems.

(10) The student installs and configures software programs and updates information technology 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, including recovery from system error;

(E) perform software customization as requested;

(F) document all procedures; and

(G) install and maintain security software.

(11) 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.

(12) 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.

§130.274. Telecommunications and Networking (One to Two Credits).

(a) General requirements This course is recommended for students in Grades 10-12. Recommended prerequisites: Principals of Information Technology and Computer Maintenance.

(b) Introduction. Students 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 will have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems.

(c) Knowledge and skills.

(1) The student demonstrates the necessary skills for career development, employability, and successful completion of course outcomes. The student is expected to:

(A) identify and demonstrate positive 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 information technology; and

(I) demonstrate planning and time-management skills such as project management and storyboarding.

(2) The student identifies various employment opportunities in the information technology 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 resumé.

(3) 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.

(4) The student acquires an understanding of telecommunications and data network services. The student is expected to:

(A) explain the theories of electricity and electronics;

(B) explain proper troubleshooting techniques for alternating and direct current electronics;

(C) explain digital and analog electronics theory;

(D) explain microcomputer processor theory;

(E) define the use of Boolean logic in computer technologies;

(F) distinguish the differences between a data packet and voice communications;

(G) define the layers and functions of the Open System Interconnection model;

(H) explain Transport Control Protocol and Internet Protocol fundamentals, including subnetting;

(I) distinguish between public and private networks;

(J) describe the standards and operations of wireless technologies in telecommunications and data networks;

(K) differentiate between local area networks and wide area networks;

(L) identify national standards for voice and data communication; and

(M) identify the potential benefits and problems for the future of telecommunications and data networking.

(5) The student analyzes various types of configurations and upgrading. The student is expected to:

(A) identify the attributes, purposes, and functions of the various 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) recognize the differences among computer network topologies;

(F) explain the distinction between connectionless and connection transport;

(G) explain how and when to use the Transport Control Protocol and Internet Protocol utilities;

(H) explain how and when to test, validate, and troubleshoot Internet Protocol connectivity; and

(I) identify good practices to ensure network security.

(6) 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) analyze the characteristics of networks used to select the optimum configuration for an industry solution; and

(C) recommend telecommunications and data network solutions based on scenario-driven problems such as budget restrictions and knowledge of relative costs of the technologies.

(7) The student develops a network design plan. The student is expected to:

(A) produce the network planning documentation required prior to network implementation such as administrative and test accounts, passwords, Internet Protocol addressing, and configurations;

(B) explain the impact of environmental factors on computer networks;

(C) identify 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) identify new and emerging technologies that may affect the field of telecommunications and data networking services.

(8) The student implements a data network plan. The student is expected to:

(A) demonstrate in an installation scenario awareness of compatibility and cabling issues;

(B) implement an addressing scheme, including a subnetting chart;

(C) connect various types of data connectors and cabling used in computer networking and data communications;

(D) employ a systematic approach to identify the extent of a network problem, distinguish between operator or system error, and select the appropriate steps to correct the error;

(E) analyze networking scenarios and demonstrate awareness of the need to check for physical and logical indicators of trouble;

(F) determine the cause of a problem and select the appropriate corrective action for the network problem; and

(G) create a folder or hierarchical structure for the storing and organizing of data on networks.

(9) 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 telecommunications;

(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.

(10) 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.

§130.275. Computer Technician (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Principles of Information Technology and Telecommunications and Networking.

(b) Introduction. Students 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 information technology concepts and standards are essential to prepare students for success in a technology-driven society. The critical thinking, information technology experience, and product development may be conducted either in a classroom setting with an instructor, with an industry mentor, or both.

(c) Knowledge and skills.

(1) The student demonstrates the necessary skills for career development, employability, and successful completion of course outcomes. The student is expected to:

(A) identify and demonstrate positive 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 information technology; and

(1) demonstrate planning and time-management skills such as project management and storyboarding.

(2) The student identifies various employment opportunities in the information technology 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 resumé appropriate to chosen career plan, including letters of recommendation; and

(C) illustrate interview skills for successful job placement.

(3) 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.

(4) 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 information technology industry standards;

(B) demonstrate proper use of mathematics concepts as they apply to the development of products or services; and

(C) demonstrate proper use of science principles to the development of products or services.

(5) 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, analog, and 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.

(6) 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.

(7) 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, information technology concepts, and information technology 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 the analysis and evaluation of 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 development 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.

(8) The student employs project management knowledge to oversee information technology projects. The student is expected to:

(A) implement project methodologies 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 cross-functional teams to achieve information technology project goals;

(E) develop and implement quality assurance test plans; and

(F) create a contingency plan.

(9) The student recognizes and analyzes potential information technology 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 information technology crimes and security breaches.

(10) 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; and

(F) report to the user the cause of and solution to the problem.

(11) 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 information technology industry standards.

§130.276. Computer Programming (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Information Technology.

(b) Introduction. Students acquire knowledge of structured programming techniques and concepts appropriate to developing executable programs and creating appropriate documentation. Students 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 it relates to computer programming. Students apply technical skills to address business applications of emerging technologies.

(c) Knowledge and skills.

(1) The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:

(A) identify and demonstrate positive 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) demonstrate and implement proper safety procedures in handling and disposing of equipment and materials;

(H) demonstrate an understanding of legal and ethical responsibilities in relation to the field of information technology; and

(I) demonstrate planning and time-management skills such as project management and storyboarding.

(2) The student identifies various employment opportunities in the information technology 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) examine the role of certifications, resumés, and portfolios in the information technology profession.

(3) The student differentiates the concepts of integrity and confidentiality as related to technology in the business environment. The student is expected to:

(A) define business ethics;

(B) distinguish between honest and dishonest business practices;

(C) examine copyright and licensing issues in the software industry; and

(D) analyze the effects of unethical practices on a business.

(4) The student identifies and analyzes the client project software needs and requirements. The student is expected to:

(A) gather data to identify client and project requirements;

(B) identify input and output requirements;

(C) identify system processing requirements; and

(D) develop software requirements and specifications.

(5) The student develops an information technology-based project plan to solve a specific problem. The student is expected to:

(A) define scope of work to meet client-based project needs;

(B) identify software development processes and issues; and

(C) explain the software system life cycle approach.

(6) The student designs a software application plan. The student is expected to:

(A) articulate the principles of system design such as procedural, object-oriented, and event-driven processes;

(B) perform a logical design using appropriate software tools;

(C) use algorithmic and data structure concepts;



- (D) identify constraints;
- (E) identify modular design concepts; and
- (F) document the design specification using a defined procedure.

(7) The student solves problems using different types and levels of programming languages. The student is expected to:

- (A) differentiate among the concepts of data, procedural, object-oriented, and event-driven representation;
- (B) identify current programming languages and the environment in which each is used;
- (C) produce procedural and object-oriented programs using structured coding with appropriate style and clarity of expression;
- (D) demonstrate skill in program testing;
- (E) compare computed results with anticipated results to determine the reasonableness of the solutions; and
- (F) troubleshoot technological problems.

(8) The student performs quality assurance tasks. The student is expected to:

- (A) explain the software quality assurance process; and
- (B) follow established quality assurance procedures for testing, identifying problems, and tracking resolutions.

(9) The student recognizes issues and complies with procedures for maintaining the security of computerized information. The student is expected to:

- (A) identify risks to information systems facilities, data communications systems, and applications;
- (B) comply with federal and state legislation pertaining to computer crime, fraud, and abuse;
- (C) identify and select controls for information systems facilities, data communications, and applications appropriate to specific risks; and
- (D) apply procedures used to recover from situations such as system failure and computer virus.

§130.277. Advanced Computer Programming (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Principles of Information Technology and Computer Programming.

(b) Introduction. Students expand their knowledge and skills in structured programming techniques and concepts by addressing more complex problems and developing comprehensive programming solutions. Students analyze the social responsibility of business and industry regarding the significant issues relating to environment, ethics, health, safety, and diversity in society and in the workplace as it relates to computer programming. Students apply technical skills to address business applications of emerging technologies.

(c) Knowledge and skills.

(1) The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:

- (A) identify and demonstrate positive work behaviors that enhance employability and job advancement such as regular atten-

dance, 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 information technology; and

(I) demonstrate planning and time-management skills such as project management and storyboarding.

(2) The student identifies various employment opportunities in the information technology 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 resumé appropriate to chosen career plan, including letters of recommendation; and

(C) illustrate interview skills for successful job placement.

(3) The student identifies project software needs and requirements. The student is expected to:

(A) identify input and output requirements;

(B) identify system processing requirements;

(C) identify hardware, networking, and software system functional requirements;

(D) conduct project needs analysis;

(E) define a problem to be solved by created application;

(F) analyze requirements specifications using current approaches;

(G) identify project constraints; and

(H) use advanced modeling and analysis of functional requirements.

(4) The student produces an information technology based strategy and project plan to solve a provided class problem. The student is expected to:

(A) identify key functions and subsystem capabilities of modern software products;

(B) identify software resources and individual product risks; and

(C) identify software development methodologies.

(5) The student demonstrates knowledge of the software development environment. The student is expected to:

(A) use prototyping techniques;

(B) use appropriate configuration management tools;

- (C) apply language-specific programming techniques;
  - (D) develop programs using appropriate language;
  - (E) use the appropriate development environment for each selected language such as the compiler, debugger, test generator, and analyzer;
  - (F) use appropriate modeling and analysis tools; and
  - (G) use appropriate requirement tracking tools.
- (6) The student demonstrates knowledge of the software development process. The student is expected to:
- (A) articulate the information system life cycle;
  - (B) identify system analysis issues related to design, testing, implementation, and maintenance;
  - (C) identify the use of program design tools in a software development process; and
  - (D) identify current information life cycle models.
- (7) The student designs a software application. The student is expected to:
- (A) use principals of system design such as structured, object-oriented, and event-driven processes;
  - (B) perform a logical design;
  - (C) document design specifications according to a defined procedure;
  - (D) design system input, output, processing, and interfaces;
  - (E) identify the characteristics and uses of data processing such as batch, interactive, event driven, and object oriented;
  - (F) explain algorithmic and data structure concepts;
  - (G) identify constraints;
  - (H) identify modular design concepts;
  - (I) identify the features, functions, and architectures of client server computing;
  - (J) articulate database management concepts;
  - (K) define the objectives of a client server application;
  - (L) design static and dynamic online processing systems; and
  - (M) employ interface techniques.
- (8) The student codes a computer application. The student is expected to:
- (A) apply programming language concepts;
  - (B) identify the hardware software connection;
  - (C) articulate the concept of data representation;
  - (D) use structured, object-oriented, and event-driven programming techniques;
  - (E) articulate how a programming language can support multitasking and exception handling;
  - (F) identify how current key programming languages work in different operating system environments;
  - (G) translate data structures and program design into code in an appropriate language;

- (H) demonstrate key constructs and commands specific to a language;
  - (I) identify the range of languages used in software development;
  - (J) explain how to resolve program implementation issues such as debugging, documentation, and auditing;
  - (K) articulate software development issues such as correctness, reliability, and productivity;
  - (L) explain code analysis issues related to design, testing, implementation, and maintenance;
  - (M) demonstrate how to design and implement programs in a top-down manner;
  - (N) demonstrate how to translate algorithmic and modular design into computer code;
  - (O) explain how programming control structures are used to verify correctness;
  - (P) use appropriate programming language in writing computer code;
  - (Q) compile and debug computer code;
  - (R) prepare code documentation;
  - (S) prepare a project testing plan; and
  - (T) conduct unit testing and bug fixes of computer code.
- (9) The student demonstrates knowledge of software testing. The student is expected to:
- (A) develop a test plan;
  - (B) define test procedures;
  - (C) develop test cases; and
  - (D) perform software testing.
- (10) The student performs quality assurance testing. The student is expected to:
- (A) explain the software quality assurance process;
  - (B) use standard requirements for software quality assurance;
  - (C) perform software quality assurance tasks to determine a quality software product; and
  - (D) conduct code inspection.
- (11) The student performs maintenance and customer support functions: The student is expected to:
- (A) identify maintenance and support requirements;
  - (B) perform system-tuning functions; and
  - (C) implement corrections to the code and documentation.
- (12) The student applies procedures for maintaining the security of computerized information. The student is expected to:
- (A) identify risks to information systems facilities, data, communication systems, and applications;
  - (B) comply with federal and state legislation pertaining to computer crime, fraud, and abuse;

(C) identify and select controls for information systems facilities, data communications, and applications appropriate to specific risks; and

(D) apply procedures used to recover from situations such as system failure and computer virus.

§130.278. Digital and Interactive Media (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Information Technology.

(b) Introduction. Through the study of digital and interactive media and its application in information technology, students will analyze and assess current and emerging technologies, while designing and creating multimedia projects that address customer needs and resolve a problem. Students 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 enhance reading, writing, computing, communication, and critical thinking and apply them to the information technology environment.

(c) Knowledge and skills.

(1) The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:

(A) identify and demonstrate positive 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 information technology; and

(I) demonstrate planning and time-management skills such as project management and storyboarding.

(2) The student identifies employment opportunities in the information technology field with a focus in the area of interactive 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) examine the role of certifications, resumés, and portfolios in the information technology profession; and

(D) create a portfolio.

(3) 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, and wikis;

(B) use Internet resources for research purposes; and

(C) research technologies that have surfaced within the last three years in the area of interactive media.

(4) The student complies with standard practices and behaviors that meet legal and ethical responsibilities. The student is expected to:

(A) examine copyright and fair use guidelines in the digital media industry;

(B) model ethical and legal acquisition of digital information, including the correct citing of sources through the use of established methods; and

(C) demonstrate proper netiquette and acceptable use policies when using networks.

(5) The student analyzes and applies design and layout principles. 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 use perspective such as backgrounds, light, shades, shadows, and scale to capture a focal point and create depth;

(C) identify and use principles of proportion, balance, variety, emphasis, harmony, symmetry, unity, and repetition in type, color, size, line thickness, shape, and space;

(D) identify and use three-dimensional effects such as foreground, middle distance, and background images;

(E) identify and use typography;

(F) identify and use color theory; and

(G) recreate and improve existing multimedia products by applying the appropriate design and layout principles.

(6) 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) demonstrate appropriate file storage and file size management skills;

(C) recognize the various file extensions used in digital and interactive media such as compression, conversion, and use and modification;

(D) identify and choose appropriate software applications for specific digital media types such as photo, graphics, video, audio, and animation editing software; and

(E) differentiate between the color mode selections in determining product output.

(7) 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 digital manipulation software.

(8) The student demonstrates appropriate use of digital graphics. The student is expected to:

(A) create and modify digital graphics using appropriate vector-based and raster-based software following standard design principles; and

(B) export and set graphics to be used in both print and digital formats.

(9) 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 use of digital video photography equipment to capture video images;

(D) transfer video images from equipment to the computer;

(E) demonstrate videographic enhancement and editing techniques such as panning, transitions, 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 podcasting, downloadable media, and streaming.

(10) 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 podcasting, downloadable files, and streaming.

(11) The student demonstrates appropriate use of animation. The student is expected to:

(A) use the principles of motion graphics such as frames and key frames, integration of audio into an animation, and user interactive controls;

(B) create and modify a linear and a nonlinear animation using appropriate software following standard design principles; and

(C) export and set animation to be used in various digital formats and on various video animation players.

(12) The student demonstrates appropriate project management in the creation of digital media projects. The student is expected to:

(A) develop a plan for a media project such as a storyboard, stage development, and identification of equipment and resources; and

(B) evaluate a project plan along its timeline and make suggested revisions until completion of the project.

(13) The student deploys digital media into print, web-based, and video products. The student is expected to:

(A) incorporate video, audio, text, graphics, and motion graphics into an existing web page;

(B) incorporate various digital media into a printed document such as a newsletter, poster, or report;

(C) develop an interactive medium such as a compact disk or digital video disk to display video, audio, and animation products; and

(D) collect and organize student created products to build an individual portfolio.

§130.279. Web Technologies (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Principles of Information Technology.

(b) Introduction. Through the study of web technologies and design, students learn to make informed decisions and apply the decisions to the field of information technology. Students 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 enhance reading, writing, computing, communication, and critical thinking and apply them to the information technology environment.

(c) Knowledge and skills.

(1) The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:

(A) identify and demonstrate positive 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) examine the role of certifications, resumés, and portfolios in the web technology profession;

(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 information technology; and

(I) demonstrate planning and time-management skills such as project management and storyboarding.

(2) The student identifies employment opportunities in the information technology field with a focus in the area of interactive 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 resumés and portfolios; and

(D) create a portfolio.

(3) The student demonstrates knowledge and appropriate use of hardware, software, and connectivity technologies. The student is expected to:

(A) explain the fundamentals of operating systems;

(B) explain the key functions and applications of software programs;

(C) identify telecommunications and networking components;

(D) evaluate the various input, processing, output, and storage devices;

(E) identify current and future Internet protocols such as hypertext transfer protocol, file transfer protocol, telnet, and email; and

(F) identify new web technology trends.

(4) The student complies with practices and behaviors that meet legal and ethical responsibilities. The student is expected to:

(A) examine copyright and licensing issues in the software industry;

(B) model ethical and legal acquisition of digital information, including the correct citing of sources through the use of established methods; and

(C) demonstrate proper netiquette and acceptable use policies when using networks.

(5) The student acquires electronic information in a variety of formats, using research skills and electronic communication to create new knowledge, with appropriate supervision. The student is expected to:

(A) demonstrate appropriate use of navigation of network resources for information acquisition and sharing;

(B) acquire information in electronic formats such as text, audio, video, and graphics, citing the source;

(C) identify, create, modify, and use available file formats such as text, image, video analog and digital, and audio files; and

(D) synthesize information from data acquired from electronic and telecommunications resources.

(6) The student evaluates electronic information. The student is expected to:

(A) identify appropriate methods to analyze the design and functionality of web pages; and

(B) demonstrate skill in testing the accuracy and validity of information acquired.

(7) The student evaluates and employs computer-based productivity tools to create and modify web and digital media designs. The student is expected to:

(A) implement functional design criteria such as proximity, repetition, contrast, alignment, color theory, consistency, image file size, and typography;

(B) select, create, modify, and integrate effective multimedia content such as vector-based and raster graphics, motion graphics, video, and audio;

(C) create web pages in accordance with current web standards using web development skills such as version control, documentation, web application security, validation, accessibility, and compatibility across multiple browsers and devices; and

(D) demonstrate proper use of folder structure hierarchy.

(8) The student demonstrates knowledge of Internet programming strategies. The student is expected to:

(A) recognize the importance of Internet programming standards;

(B) differentiate among various web coding standards such as HyperText Markup Language, Extensible HyperText Markup Language, and cascading style sheets;

(C) use standard applications such as text-based editing programs, word processors; and web authoring software; and

(D) compare and contrast the impact of different browsers on web development.

(9) The student employs knowledge of web programming to develop and maintain web applications. The student is expected to:

(A) explain the purpose of current web content delivery enablers;

(B) explain client server applications;

(C) articulate the advantages and disadvantages to client-side processing;

(D) identify security issues related to client-side processing;

(E) use standard scripting languages to facilitate interactivity;

(F) identify characteristics of various scripting languages; and

(G) demonstrate the ability to construct secure transaction interfaces from the web server to the customer.

(10) The student employs knowledge of web administration to develop and maintain web applications. The student is expected to:

(A) compare the advantages and disadvantages of running a personal server versus using a server provider;

- (B) explain how to use advanced communication protocols;
- (C) demonstrate an understanding of and compliance with Transport Control Protocol/Internet Protocol;
- (D) identify hardware and software requirements for web servers;
- (E) evaluate server providers;
- (F) participate in the process of establishing a domain name;
- (G) simulate the administration of web servers, including uploading and managing files;
- (H) collect and analyze usage statistics;
- (I) maintain documentation of the server environment such as specifications, passwords, and software versions;
- (J) understand server backup and restoration of software features; and
- (K) propose security measures to protect web servers from electronic threats such as unauthorized access and negative intentions.

(11) The student evaluates a problem and creates a written plan of action for meeting client requirements. The student is expected to:

- (A) communicate with clients to analyze requirements to meet needs;
- (B) document all necessary design properties;
- (C) identify tools and resources to complete the job;
- (D) identify and address risks;
- (E) develop and use a timeline task list such as critical milestones, potential challenges, and interdependencies; and
- (F) use various methods to evaluate the progress of the plan and modify as necessary.

(12) The student creates and implements a written plan of action in the development of a web product. The student is expected to:

- (A) create and simulate the publication of a multipage web product using client required content and web design concepts;
- (B) develop a test plan for a multipage web product for testing usability, effectiveness, reliability, and customer acceptance;
- (C) explain the quality assurance process; and
- (D) develop and implement a quality assurance plan.

§130.280. Research in Information Technology Solutions (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grade 12. Prerequisite: a minimum of two high school information technology courses.

(b) Introduction. Students 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 information technology concepts and standards are essential to prepare students for success in a technology-driven society. Critical thinking, information technology experience, and product develop-

ment may be conducted in a classroom setting with an industry mentor, as an unpaid internship, or as career preparation.

(c) Knowledge and skills.

(1) The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:

(A) identify and demonstrate positive 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 information technology; and

(I) demonstrate planning and time-management skills such as project management and storyboarding.

(2) The student identifies various employment opportunities in the information technology 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 resumé and portfolio appropriate to chosen career plan, including letters of recommendation; and

(C) illustrate interview skills for successful job placement.

(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 information technology 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.

(4) The student uses a systems approach for conducting technological research to discover a problem in the field of information technology with the appropriate supervision and guidance. The student is expected to:

(A) identify a problem relating to information technology; and

(B) describe and use the approach for conducting a research activity.

(5) The student creates a technological solution for a problem in the field of information technology. The student is expected to:

(A) apply critical-thinking strategies to develop a solution using appropriate technologies and resources, information technology 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.

(6) The student designs, creates, and implements a product or service that addresses a problem in the field of information technology 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.

(7) 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 information technology industry standards.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

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For further information, please call: (512) 475-1497



## SUBCHAPTER L. LAW, PUBLIC SAFETY, CORRECTIONS, AND SECURITY

### 19 TAC §§130.291 - 130.301

The State Board of Education (SBOE) proposes new §§130.291-130.301, concerning the Texas essential knowledge and skills (TEKS) for law, public safety, corrections, and security. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated.

It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.291. Implementation of Texas Essential Knowledge and Skills for Law, Public Safety, Corrections, and Security.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.292. Principles of Law, Public Safety, Corrections, and Security (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) Introduction. Principles of Law, Public Safety, Corrections, and Security introduces students to professions in law enforcement, security, corrections, and fire 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, security, and corrections.

(c) Knowledge and skills.

(1) The student achieves academic knowledge and skills required for a career and postsecondary education opportunities associated with law, public safety, corrections, and security. 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 law, public safety, corrections, and security.

(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) model effective use of grammar to demonstrate verbal communication skills;

(B) execute speaking strategies used to communicate specific ideas to various audiences;

(C) interpret voice quality and delivery to interpret verbal communication; and

(D) model effective interpersonal skills necessary to communicate with coworkers and the public.

(3) The student formulates ideas, proposals, and solutions to address problems related to law, public safety, corrections, and security in order to ensure effective and efficient delivery of services. The student is expected to:

(A) use logical constructions 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 law, public safety, corrections, and security.

(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 the dangers associated with careers in law, public safety, corrections, and security;

(B) 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 and cardiopulmonary resuscitation 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) explain 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 United States 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) outline 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) outline 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 relationship between police, fire, and emergency medical services.

§130.293. Law Enforcement I (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security.

(b) Introduction. Law Enforcement I is an overview of the history, organization, and functions of local, state, and federal law enforcement. This course includes the role of constitutional law, the United States legal system, criminal law, law enforcement terminology, and the classification and elements of crime.

(c) Knowledge and skills.

(1) The student explores the history of law enforcement. The student is expected to:

(A) trace the history of law enforcement from pre-industrial Europe, nineteenth century England, and the United States through contemporary policing in the United States; and

(B) identify core issues in the development of law enforcement such as centralization and authority.

(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, 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 uses critical-thinking skills independently and in teams. The student is expected to:
- (A) analyze elements of a problem to develop creative solutions; and
  - (B) use problem-solving methods when developing proposals and solutions.
- (4) The student understands ethical behavior standards required for law enforcement personnel. The student is expected to:
- (A) explain the role of the United States 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 United States 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 state and federal court systems;
  - (D) illustrate the progression of a case as it moves through local, state, and federal jurisdiction; and
  - (E) compare the characteristics of civil and criminal court systems.
- (6) The student analyzes custody and interrogation as they relate to the United States Supreme court decision in *Miranda v. Arizona*. The student is expected to:
- (A) advise a person of their constitutional rights using the Miranda warning requirements;
  - (B) explain the additional requirements above the Miranda warnings for juvenile suspects, offenders, and witnesses; and
  - (C) conduct a non-custodial and custodial interview.
- (7) The student analyzes procedural and substantive criminal law. The student is expected to:
- (A) define crime categories and respective punishments;
  - (B) analyze the elements of criminal acts;

- (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 Right Clarification Act of 1997; and
  - (B) research the state and federal laws related to the witness protection program.
- (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 recognizes the signs and symptoms of possible child and geriatric abuse and neglect. The student is expected to:
- (A) explain Battered Child Syndrome; and
  - (B) summarize characteristics found in victims of child and geriatric abuse and neglect.
- (11) The student explains behavioral symptoms of drug users and dangers associated with handling drugs. The student is expected to:
- (A) identify current commonly abused drugs in society;
  - (B) research the effects of substances such as ecstasy, gamma hydroxybutyrate, rohypnol, and ketamine; and
  - (C) summarize the procedures for handling dangerous and unpredictable drugs such as methamphetamine.
- (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 police incident reports. The student is expected to:
- (A) describe the components of a police incident report;
  - (B) explain why a police incident report is a legal document;
  - (C) solicit the appropriate information for a police incident report; and
  - (D) prepare a police 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) comply with local established policies and procedures;

(C) execute a simulated traffic stop using the seven-step violator contact method; and

(D) execute a simulated felony traffic stop.

(15) The student employs procedures to protect, document, and process a crime scene. The student is expected to:

(A) lift and preserve developed latent prints from a simulated crime scene;

(B) document and protect the crime scene area for further investigation; and

(C) demonstrate crime scene investigation techniques used to collect, protect, and document deoxyribonucleic acid evidence collection in a simulated crime scene.

§130.294. Law Enforcement II (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Law Enforcement I.

(b) Introduction. Law Enforcement II provides the knowledge and skills necessary to prepare for a career in law enforcement. This course includes the ethical and legal responsibilities, operation of police and emergency telecommunication equipment, and courtroom testimony.

(c) 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) use communication skills to evaluate body language, gestures, verbal tone, and inflection;

(B) use interpersonal communication skills; and

(C) use writing skills to facilitate effective field note taking and report writing such as police incident reports.

(2) The student uses telecommunication equipment. The student is expected to:

(A) conduct telecommunication using mobile and hand-held radio systems;

(B) conduct simulated radio communications;

(C) transmit and retrieve information over the mobile data terminal; and

(D) disseminate data to multiple mobilized units using the mobile data terminal.

(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) prepare testimony for court providing factual information from reports and eyewitness accounts; and

(C) present testimony during a mock trial.

(4) The student recognizes the importance of using anger management techniques to resolve conflicts and reduce anger. The student is expected to:

(A) examine anger management techniques used in law enforcement;

(B) distinguish between passive, 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) determine 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, the hearing impaired, the visually impaired, and the mobility impaired; and

(D) define the steps involved in conducting the preliminary investigation of a hate 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; and

(C) differentiate domestic violence Protective Orders, Order of No Contact, and Orders to Pick up Children.

(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;

- and
- (C) differentiate between legal and illegal alcohol sales;
- (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 Standardized Field Sobriety Test, Horizontal Gaze Nystagmus, Walk-and-Turn, and One-Leg-Stand;
- (B) recognize and interpret evidence;
- (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 implements crowd management strategies to maintain control over large gatherings. The student is expected to:
- (A) role play techniques employed to effectively control crowds; and
- (B) explain the deployment of less-than-lethal and chemical crowd control measures.
- (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; and
- (B) explain the guidelines and restrictions imposed by state and federal governments related to the use of deadly force.
- (13) The student describes procedures designed to safely transport a person in custody. The student is expected to:
- (A) safely search an individual incidental to an arrest; and
- (B) demonstrate the procedures for transporting a person without violating personal rights or jeopardizing personal safety.
- (14) The student conducts interviews and interrogations of individuals ensuring protection of rights as outlined in the United States 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) summarize the elements of the disaster preparedness system;
- (B) evaluate the effectiveness of the incident command center; and
- (C) evaluate preparedness and response systems during and after a disaster.

(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; and
- (D) conduct a simulated building and property search to locate explosive devices and materials.

(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 as used in law enforcement such as robots to diffuse potential explosives; and
- (B) explain the importance of continuing education in law enforcement.

*§130.295. Forensic Science (One Science Credit).*

(a) General requirements. The course is recommended for students in Grades 11-12. Prerequisites: Biology and Chemistry. Recommended prerequisites: Principles of Law, Public Safety, Corrections, and Security and Law Enforcement I. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum).

(b) Introduction.

(1) Forensic Science. Forensic Science is a course that uses a structured and scientific approach to the investigation of crimes of assault, abuse and neglect, domestic violence, accidental death, homicide, and the psychology of criminal behavior. Students will learn terminology and investigative procedures related to crime scene, questioning, interviewing, criminal behavior characteristics, truth detection, and scientific procedures used to solve crimes. Using scientific methods, students will collect and analyze evidence through case studies and simulated crime scenes such as fingerprint analysis, ballistics, and blood spatter analysis. Students will learn the history, legal aspects, and career options for forensic science.

(2) 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 knowl-

edge 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.

(3) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation can be experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

(4) Science and social ethics. Scientific decision making is a way of answering questions about the natural world. Students should be able to distinguish between scientific decision-making methods and ethical and social decisions that involve the application of scientific information.

(5) Scientific systems. A system is a collection of cycles, structures, and processes that interact. All systems have basic properties that can be described in terms of 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. 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.

(c) Knowledge and skills.

(1) The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. These investigations must involve actively obtaining and analyzing data with physical equipment, but may also involve experimentation in a simulated environment as well as field observations that extend beyond the classroom. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations; and

(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.

(2) The student uses scientific methods and equipment during laboratory and field investigations. The student is expected to:

(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section;

(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories;

(C) know 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;

(D) distinguish between scientific hypotheses and scientific theories;

(E) plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology;

(F) collect and organize qualitative and quantitative data and make measurements with accuracy and precision using 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, micropipettors, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, cameras, Petri dishes, lab incubators, meter sticks, and models, diagrams, or samples of biological specimens or structures;

(G) analyze, evaluate, make inferences, and predict trends from data; and

(H) communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

(3) The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials;

(C) draw inferences based on data related to promotional materials for products and services;

(D) evaluate the impact of scientific research on society and the environment;

(E) evaluate models according to their limitations in representing biological objects or events; and

(F) research and describe the history of science and contributions of scientists.

(4) The student explores the history, legal responsibilities, and career options for forensic science. The student is expected to:

(A) distinguish between forensic science and criminalistics in law, public safety, corrections, and security;

(B) identify roles, functions, and responsibilities of forensic science professionals;

(C) summarize the ethical standards required of a forensic science professional;

(D) present career information in written and verbal formats;

(E) recognize the major contributors to the development of forensic science; and

(F) illustrate the history of forensic science.

(5) The student recognizes the procedures of evidence collection while maintaining the integrity of a crime scene. The student is expected to:

(A) analyze the role of scientists such as forensic pathologists and anthropologists as they relate to a homicide investigation;

(B) demonstrate the ability to work as a member of a team;

(C) conduct a systematic search of a simulated crime scene for physical evidence following crime scene protocol;

(D) apply knowledge of the elements of criminal law that guide search and seizure of persons, property, and evidence;

(E) describe the elements of a crime scene sketch such as measurements, compass directions, scale of proportion, legend, key, and title;

(F) develop a crime scene sketch using triangulation, rectangular coordinates, straight-line methods, and use of coordinates on transecting baseline;

(G) outline the chain of custody procedure for evidence discovered in a crime scene;

(H) demonstrate proper techniques for collecting and packaging physical evidence found at a crime scene;

(I) explain the functions of national databases available to forensic scientists; and

(J) collect and preserve physical evidence from a simulated crime scene.

(6) The student analyzes the evidence collected from a crime scene using scientific methods. The student is expected to:

(A) demonstrate conversions of measurements between English and International System (SI) of units;

(B) distinguish between physical and chemical properties of matter using the periodic table;

(C) determine the elements within a compound or mixture;

(D) identify the four types of chemical reactions;

(E) explain properties of refractive index;

(F) explain dispersion of light through a prism;

(G) identify the light sources used in forensic science such as ultraviolet light;

(H) explain the examination of trace evidence using instruments such as a spectrophotometer, stereoscope, electron microscope, and compound microscope;

(I) calculate the direction of a projectile by examining glass fractures; and

(J) compare the composition of glass fragments.

(7) The student recognizes the methods to process and analyze trace evidence commonly found in a crime scene. The student is expected to:

(A) perform continuous and light emissions laboratory procedures to identify trace evidence;

(B) process trace evidence such as soil, grass, glass, blood, fibers, and hair collected in a simulated crime scene;

(C) compare the anatomy of the human hair to animal hair; and

(D) differentiate between natural and manufactured fibers.

(8) The student analyzes fingerprints in forensic science. The student is expected to:

(A) compare the three major fingerprint patterns of arches, loops, and whorls and their respective subclasses;

(B) identify characteristics of fingerprints, including bifurcations, ending ridges, ridge islands, dots, short ridges, and divergence ridges;

(C) distinguish among visible, plastic, and latent fingerprints;

(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 fluorescent powders;

(F) explain the Automatic Fingerprint Identification System; and

(G) compare fingerprints collected at a simulated crime scene with the fingerprints of a suspect.

(9) 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 isolating an invisible blood stain using reagents such as luminol.

(10) The student explores toxicology laboratory procedures in forensic science. The student is expected to:

(A) explain the absorption, distribution, and elimination of alcohol through the human body;

(B) describe 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 in the forensic laboratory for proper preservation of blood samples.

(11) The student explores serology laboratory procedures in forensic science. The student is expected to:

(A) explain forensic laboratory procedures to determine if a stain detected in a crime scene is blood;

(B) identify the red blood cell antigens and antibodies as they relate to human blood types;

(C) determine genotypes and phenotypes in the human red blood cell system using Punnet Squares; and

(D) research methodologies used to collect and analyze other body fluids.

(12) The student analyzes deoxyribonucleic acid laboratory procedures in forensic science. The student is expected to:

(A) diagram the deoxyribonucleic acid molecule, including nitrogen bases, sugars, and phosphate groups;

(B) explain base pairing of adenine, thymine, cytosine, and guanine as they relate to deoxyribonucleic acid fingerprinting;

(C) extract deoxyribonucleic acid from food such as peas and strawberries;

(D) explain the polymerase chain reaction laboratory procedure for forensic deoxyribonucleic acid typing; and

(E) collect and package deoxyribonucleic acid from a simulated crime scene.

(13) The student identifies drugs found at a simulated crime scene. The student is expected to:

(A) classify controlled substances using Food and Drug Administration classification; and

(B) identify controlled substances using laboratory procedures such as color test reactions, microcrystalline procedures, chromatography, and spectrophotometry.

(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) recognize characteristics of bullet and cartridge cases;

(C) explain laboratory methodologies used to determine whether an individual has fired a weapon such as identifying gun shot residue; and

(D) recognize the type of information available through the National Integrated Ballistics Information Network.

(15) The student explores principles of anthropology 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 bones with other animals;

(C) describe the techniques used to excavate bones from a crime scene;

(D) determine unique characteristics of the human skeletal system such as gender and age;

(E) explain the role of dental records in identification of remains; and

(F) describe the role of dental matching in forensic science.

(16) 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 through case studies.

§130.296. Court Systems and Practices (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Law Enforcement I.

(b) Introduction. 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.

(c) 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) outline the state court system and the federal court system;

(C) explain how jurisdiction impacts criminal charges and trial proceedings;

(D) explain the purposes of law;

(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 the impact of the grand jury process on court proceedings;

(H) examine relationship of the United States Constitution and the Bill of Rights upon the court system; and

(I) explore the impact of public opinion and the legislature on the court system in the United States.

(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, 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, gestures, verbal tone, and inflection;

(B) use interpersonal communication skills; and

(C) use writing skills to facilitate 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;

(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;

(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 United States 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 Amendment 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.

§130.297. Correctional Services (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security.

(b) Introduction. In Correctional Services, students prepare for certification required for employment as a correctional officer. The student will learn the role and responsibilities of a correctional officer; discuss relevant rules, regulations, and laws; and discuss defensive tactics, restraint techniques, and first aid procedures as used in the correctional setting. The student will analyze rehabilitation and alternatives to institutionalization.

(c) Knowledge and skills.

(1) The student researches the history of correctional services. The student is expected to:

(A) examine the history of corrections in the United States and Texas;

(B) examine the rules of conduct and disciplinary action guidelines for employees of correctional facilities;

(C) analyze personal responsibilities and preferences to determine requirements for employment in correctional services;

(D) effectively search methods to locate potential employment opportunities in correctional services; and

(E) identify ongoing academic education to develop a positive public image.

(2) The student recognizes professional standards and ethical responsibilities in the correctional facility. The student is expected to:

(A) identify employer expectations of punctuality, attendance, and time management;

(B) analyze the ethical responsibilities of correctional officers to ensure protections of rights;

(C) discuss the importance of professionalism in the field of corrections; and

(D) use leadership qualities within a team environment.

(3) The student uses verbal communication skills necessary for a correctional officer. The student is expected to:

(A) define technical concepts and vocabulary associated with correctional services through effective verbal communication;

(B) perform formal and extemporaneous presentations that demonstrate organizational strategy and delivery skills; and

(C) listen and speak effectively to contribute to group discussions and meetings.

(4) The student performs active listening skills to obtain and clarify information. The student is expected to:

(A) apply listening skills in obtaining and clarifying information provided in verbal communication; and

(B) demonstrate verbal communication skills to explain the meaning of technical concepts, knowledge, and vocabulary 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 and cardiopulmonary resuscitation 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 and the laws of arrest to execute official correctional service duties while respecting citizen rights;

(B) explore the impact of the United States 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 non-citizens 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 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 an inmate through 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.

§130.298. Security Services (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security.

(b) Introduction. Security Services provides the knowledge and skills necessary to prepare for certification in security 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.

(c) Knowledge and skills.

(1) The student explores the history of security systems in the United States. The student is expected to:

(A) research the development of security systems through the history of the United States; and

(B) explain the importance of the interface between security services and all aspects law enforcement.

(2) The student identifies health, safety, and environmental responsibilities of security 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.

(3) The student analyzes the impact of ethical and legal responsibilities relevant to security services. The student is expected to:

(A) differentiate between civil and criminal law;

(B) analyze the impact of legal issues relevant to security services;

(C) describe the importance of good public relations techniques as they relate to security and crisis situations;

(D) analyze the connections between constitutional law 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; and

(K) analyze the impact of the Fourteenth Amendment as it relates to due process and equal protection of the law.

(4) 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;

(B) present examples that depict potential physical, electronic, procedural, and personnel vulnerabilities;

(C) summarize the concept of risk management from a 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.

(5) 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 cyber crime, the Internet, and Internet trafficking.

(6) 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.

(7) 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.

(8) 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.

(9) 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.

§130.299. Firefighter I (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security.

(b) Introduction. 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 protections equipment, and the principles of fire safety.

(c) Knowledge and skills.

(1) The student uses communication skills as related to fire management. The student is expected to:

(A) use speech and written communication using equipment and platforms common to fire management services;

(B) use steps involved in using radio communication for fire management;

(C) use 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 material; 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 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 as stated in the Standards Manual for Fire Protection Personnel;

(D) identify the levels of instructor certification by the Texas Commission on Fire Protection and in the Standards Manual for Fire Protection Personnel; and

(E) describe responsibilities of a firefighter as required by the National Fire Protection Agency 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, oxida-

tion, 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 examples of heat sources such as chemical, electrical, mechanical, and nuclear;

(F) describe the hazards and the appropriate action to be taken for extinguishment, including ignition, growth, flashover, fully developed, and decay;

(G) explain the special conditions that occur during a fire's growth, including flameover and rollover; thermal layering, and backdraft; and

(H) convert units of heat measurement such as British thermal unit, Fahrenheit, Celsius, and Calorie.

(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 solid, liquid, and gaseous fuels;

(B) explain specific gravity, vapor density, and the theory of surface-to-mass ratio as related to the combustion process; 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) describe the physical characteristics of water;

(B) explain the Law of Specific Heat, the Law of Latent Heat, and the Law of Heat Flow; and

(C) 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) explain the functions of the respiratory and the cardiovascular systems;

(B) analyze 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) describe the hazardous environments that require the use of respiratory protection;

(E) identify the 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 fire fighting skills while wearing self-contained breathing apparatus. The student is expected to:

(A) identify and describe the safety requirements when using the self-contained breathing apparatus;

(B) describe and demonstrate 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 donning and doffing of the self-contained breathing apparatus while wearing protective clothing;

(F) demonstrate the replacement of an extended 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 a firefighter with functioning respiratory protection, a firefighter without functioning respiratory protection, and a civilian without respiratory protection;

(H) perform fire fighting skills while wearing the full self-contained breathing apparatus, at a minimum, with the contents of a fully charged cylinder;

(I) demonstrate the use of the self-contained breathing apparatus in conditions of obscured visibility and in a restricted passage; 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 repairing and reconditioning, cylinder recharging, 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) describe the types of protective clothing;

(B) identify the different articles of structural fire fighting protective equipment and their functions;

(C) demonstrate the proper procedure for inspecting and cleaning personal protective equipment after each use;

(D) describe the limitations of personal protective equipment in providing protection to a firefighter;

(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 shield, hood, boots, gloves, protective coat and trousers, self-contained breathing apparatus, personal alert safety system, and eye protection.

(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 safety device; and

(B) demonstrate the proper testing of a safety device.

(15) The student recognizes all aspects of the fire department organization. The student is expected to:

(A) describe the organization and structure of a fire department;

(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

(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;

(C) identify at least three 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) safely demonstrate ten types of tools used for forcible entry, rescue, and ventilation;

(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 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.

§130.300. Firefighter II (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Firefighter I. Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security.

(b) Introduction. Firefighter II is the second 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 protections equipment, and the principles of fire safety. Students will use procedures for use of fire extinguishers, ladder, fire hose, and water supply apparatus.

(c) 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) use 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 fire 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) describe the characteristics and applications for the classes of the pump tank water extinguisher;

(B) describe the characteristics and applications for the classes of an aqueous film forming foam extinguisher;

(C) explain the characteristics and applications for the classes of a carbon dioxide extinguisher; and

(D) describe the characteristics and applications for the classes of a dry chemical extinguisher and a wet chemical extinguisher.

(4) The student explains the purpose of the National Fire Protection Association standards applicable to fire service 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;

(C) identify the load capacities for ground ladders;

- (D) select a ladder for a given task;
- (E) demonstrate raising and positioning ground ladders;
- (F) describe and demonstrate securing a ladder;
- (G) explain proper ladder climbing techniques while transporting tools and equipment or assisting a person with a simulated injury;
- (H) demonstrate proper ladder climbing techniques while transporting tools and equipment or assisting a person with a simulated injury; and
- (I) 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. The student is expected to:

- (A) describe hose classifications by use;
- (B) identify and describe hose classifications by construction;
- (C) explain the application of each size and type of hose on a pumper as required to be carried by National Fire Protection Association 1901; and
- (D) practice the methods of attaching couplings to a fire hose.

(6) The student reviews the procedures for care, maintenance, and inspection of fire hoses, couplings, nozzles, and water valves. The student is expected to:

- (A) define the characteristics of fire streams;
- (B) identify the type, design, operation, required nozzle pressure, and flow of a given selection of nozzles and tips;
- (C) describe the methods of washing and drying fire hoses;
- (D) demonstrate the proper use of nozzles, hose appliances, water valves, adapters, and tools;
- (E) demonstrate the one- and two-person methods of connecting, dismantling, and rolling various sizes of hose lines;
- (F) demonstrate advancing dry hose lines and charged attack lines of different sizes;
- (G) demonstrate methods of hose load finishes; and
- (H) 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.

(7) The student explains how to deploy portable water tanks as well as equipment to transfer water between tanks. 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 by relay pumping or water shuttle.

(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, including fire and security surveillance; and
- (C) identify the proper procedure for restoration of the premises after a fire.

§130.301. Practicum in Law, Public Safety, Corrections, and Security (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. 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, Public Safety, Corrections, and Security cluster.

(b) Introduction. The Practicum 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.

(c) 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 products and services;
- (F) describe professional standards in protective services careers such as dress, grooming, and personal protective equipment as appropriate; and
- (G) comply with practicum setting safety 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 as it relates 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 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) use 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) use informational texts, Internet websites, and technical materials to access 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 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.

(5) The student demonstrates technical knowledge and skills required to pursue a career in the Law, Public Safety, Corrections, and Security 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 to include:

(i) technical skill competencies;

(ii) licensures or certifications;

(iii) 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 technical competencies mastered during the practicum;

(vi) resumé;

(vii) samples of work; and

(viii) evaluation from the practicum supervisor; and

(B) present the portfolio to all interested stakeholders such as in a poster presentation.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Director, Policy Coordination

Texas Education Agency

Earliest possible date of adoption: July 12, 2009

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## SUBCHAPTER M. MANUFACTURING

### 19 TAC §§130.321 - 130.330

The State Board of Education (SBOE) proposes new §§130.321-130.330, concerning the Texas essential knowledge and skills (TEKS) for manufacturing. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for

proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish

curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.321. Implementation of Texas Essential Knowledge and Skills for Manufacturing.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.322. Principles of Manufacturing (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Algebra I or Geometry.

(b) Introduction. In Principles of Manufacturing, 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. Knowledge and skills in the proper application of principles of manufacturing, the design of technology, the efficient production of technology, and the assessment of the effects of manufacturing production technology prepare students for success in the modern world. The study of manufacturing technology 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. In addition to general academic and technical knowledge and skills, students gain an understanding of career opportunities available in manufacturing and what employers require to gain and maintain employment in these careers.

(c) 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) describe how teams function;
- (B) use teamwork to solve problems;
- (C) distinguish team roles such as team leaders and team members;
- (D) identify characteristics of good leaders;
- (E) identify employers' work expectations;
- (F) discuss Equal Employment Opportunity law in the workplace;
- (G) use time-management techniques to develop work schedules;
- (H) describe how teams measure results; and
- (I) develop a method to reward team performance.

(2) 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 skills 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 to clarify objectives; and
  - (F) demonstrate skills related to health and safety in the workplace, as specified by appropriate government regulations.
- (3) The student describes how a systems model can be used to describe manufacturing and technological activities. The student is expected to:
- (A) identify the manufacturing processes such as input, output, and feedback;
  - (B) describe system differences such as open and closed; and
  - (C) describe how technological systems interact to achieve common goals.
- (4) The student applies manufacturing concepts to specific problems. The student is expected to:
- (A) distinguish between disciplines such as engineering, science, and technology;
  - (B) analyze engineering concepts to solve practical problems;
  - (C) use problem-solving tools such as calculators and computers;
  - (D) evaluate computers for simulation tasks;
  - (E) use tools for laboratory equipment testing;
  - (F) use precision measuring instruments; and
  - (G) evaluate software to design quality assurance models.
- (5) The student designs products or systems using appropriate processes and techniques. The student is expected to:
- (A) improve a product that meets a specified need;
  - (B) identify system improvements such as quality, reliability, and safety;
  - (C) produce engineering drawings using standard technical communication techniques; and
  - (D) research the patenting process.
- (6) 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; and
  - (B) experiment with new technologies.
- (7) The student describes quality and how it is measured in manufacturing. The student is expected to:

- (A) evaluate different quality control applications in manufacturing; and
  - (B) research how the quality of products and services affects engineering decisions.
- (8) 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 chemical, mechanical, and physical;
  - (B) analyze the processes needed to complete a project;
  - (C) use a variety of tools such as equipment and machines; and
  - (D) produce an item that is student designed.
- (9) The student practices safe work habits. The student is expected to:
- (A) master relevant safety tests;
  - (B) analyze hazardous materials; and
  - (C) safely dispose of hazardous materials.
- (10) The student describes the importance of maintenance. The student is expected to:
- (A) perform maintenance on selected equipment;
  - (B) store materials correctly; and
  - (C) analyze the results of improper maintenance.
- (11) The student manages a manufacturing project. The student is expected to:
- (A) participate in the operation of a manufacturing project; and
  - (B) develop a plan for completing an individual project.
- (12) The student applies the appropriate codes, laws, standards, or regulations such as Occupational Safety and Health Administration, National Electrical Code, American Society for Testing Materials, standard symbols, and line weights. The student is expected to:
- (A) research the importance of regulations such as codes, laws, and standards; and
  - (B) follow the appropriate regulations.
- (13) The student describes the intended and unintended effects of technological solutions to the manufacturing process. The student is expected to:
- (A) evaluate an assessment strategy such as the risks and benefits of engineering activities; and
  - (B) demonstrate how engineering changes environments.
- (14) 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;

(E) evaluate the factors that affect the implementation of new ideas; and

(F) analyze how manufacturing evolves.

(15) The student solves problems, thinks critically, and makes decisions related to manufacturing. The student is expected to:

(A) apply an engineering approach to problem solving to improve a manufactured product;

(B) apply critical-thinking strategies to the analysis of proposed solutions; and

(C) apply decision-making techniques to engineering solutions.

(16) The student identifies the factors that influence the cost of an item or service. The student is expected to:

(A) defend a budget for a project; and

(B) determine the most effective strategies to minimize costs.

(17) 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.

(18) 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.

(19) The student selects and reports on career opportunities, requirements, and expectations in engineering 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.

§130.323. *Welding (One to Two Credits).*

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Algebra 1.

(b) Introduction. Rapid advances in technology have created new career opportunities and demands in many industries. Welding provides the knowledge, skills, and technologies required for employment in metal technology systems. Students 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.

(c) 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) describe how teams function;

(B) use teamwork to solve problems;

(C) distinguish team roles such as team leaders and team members;

(D) identify characteristics of good leaders;

(E) identify employers' work expectations;

(F) discuss Equal Employment Opportunity law in the workplace;

(G) use time-management techniques to develop work schedules;

(H) describe how teams measure results; and

(I) develop a method to reward team performance.

(2) 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 skills 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 government regulations.

(3) 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, both U.S. customary and metric;

(E) accurately use an appropriate tool to make measurements;

(F) compute measurements such as area, surface area, volume, and perimeter;

(G) determine how changes in dimension affect geometric figures;

(H) calculate problems using whole numbers, fractions, mixed numbers, and decimals;

(I) use a calculator to perform computations;

(J) perform conversions between fractions and decimals;

(K) understand the functions of angles;

(L) apply right triangle relationships using the Pythagorean Theorem;

(M) understand the parts of a circle;

(N) identify the most reasonable mathematical solution using estimation;

(O) use cross-sections of three-dimensional figures to relate to plane figures;

(P) describe orthographic views of three-dimensional figures; and

(Q) describe isometric views of three-dimensional figures.

(4) The student knows the function and application of the tools, equipment, technologies, and materials used in welding. The student is expected to:

(A) use welding equipment according to safety standards;

(B) properly dispose of environmentally hazardous materials used in welding; and

(C) use appropriate personal protective equipment as needed to follow safety measures.

(5) The student understands welding joint design, symbols, and welds. The student is expected to:

(A) demonstrate knowledge of a welding blueprint;

(B) interpret blueprints, drawings, charts, and diagrams;

(C) analyze components of the welding symbol;

(D) analyze types of welding joints;

(E) analyze positions of welding; and

(F) identify types of welds such as fillet, groove, spot, plug, and flanged.

(6) The student applies the concepts and skills of welding to simulate actual work situations. The student is expected to:

(A) explore careers in welding;

(B) work independently to fabricate a welded project with minimal assistance;

(C) work collaboratively with other students to complete a relevant project; and

(D) troubleshoot equipment.

(7) The student knows the concepts and intricacies of inspections and related codes. The student is expected to:

(A) evaluate weld inspection processes; and

(B) analyze welding codes.

(8) The student performs oxy-fuel processes on carbon steels. The student is expected to:

(A) observe 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 oxy-fuel process;

(E) distinguish factors affecting base metals;

(F) demonstrate proper cutting techniques such as piercing, straight line, and bevel;

(G) perform welding and brazing; and

(H) identify acceptable cuts.

(9) The student performs plasma arc cutting on metals. The student is expected to:

(A) observe 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 shape cutting.

(10) 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 the theories of electrical 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) determine appropriate filler for base metal in shielded metal arc welding;

(F) perform welds such as fillet and groove;

(G) perform passes such as root, hot, filler, and cover;

(H) perform plate preparation; and

(I) perform heating processes such as pre-heating and post-heating.

(11) The student performs gas metal arc welding principles and practices. The student is expected to:

(A) use safe operating practices;

(B) demonstrate knowledge of the theories of electrical relationships such as alternating current and direct current, heat transfer, and polarity;

(C) apply gas metal arc welding principles;

(D) demonstrate proper set-up procedure for gas metal arc welding;

(E) determine appropriate filler for base metal in gas metal arc welding; and

(F) perform fillet welds.

(12) The student performs flux cored arc welding principles and practices on metals. The student is expected to:

(A) use safe operating practices;

(B) demonstrate knowledge of the theories of electrical relationships such as alternating current and direct current, heat transfer, and polarity;

(C) apply flux cored arc welding principles;

(D) demonstrate proper set-up procedure for flux cored arc welding;

(E) determine appropriate filler for base metal in flux cored arc welding;

(F) perform fillet welds; and

(G) perform welds in all appropriate positions.

(13) The student performs gas tungsten arc welding on metals. The student is expected to:

(A) use safe operating practices;

(B) demonstrate knowledge of the theories of electrical relationships such as alternating current and direct current, heat transfer, and polarity;

(C) determine the common types of tungsten and filler materials;

(D) demonstrate proper set-up procedure for gas tungsten arc welding;

(E) perform fillet welds;

(F) perform welds in all appropriate positions; and

(G) perform welds on carbon steel.

§130.324. Advanced Welding (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Algebra I or Geometry and Welding.

(b) Introduction. Advanced Welding builds on knowledge and skills developed in Welding. Students will develop advanced welding concepts and skills as they relate 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.

(c) 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) analyze how effective teams function;

(B) apply teamwork to solve advanced problems;

(C) distinguish team roles such as team leaders and team members;

(D) evaluate characteristics of good leaders;

(E) use employers' work expectations to measure project success;

(F) evaluate team performance in using time-management techniques to develop work schedules; and

(G) develop a method to evaluate team performance.

(2) The student explores the employability characteristics of a successful worker in the global economy. The student is expected to:

(A) apply academic knowledge and skills required for postsecondary education;

(B) use employers' expectations to evaluate student performance and customer satisfaction;

(C) demonstrate the skills 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 government regulations.

(3) The student applies academic skills to the requirements of welding. The student is expected to:

(A) differentiate effective communication skills with individuals from varied cultures such as fellow workers, management, and customers;

(B) demonstrate mathematical skills to estimate costs;

(C) determine the impact of inaccurate readings of measuring devices on cost estimates;

(D) justify the selection of a tool to make accurate measurements;

(E) compute measurements such as area, surface area, volume, and perimeter;

(F) calculate problems using whole numbers, fractions, mixed numbers, and decimals;

(G) use a calculator to perform advanced computations;

(H) apply right triangle relationships using the Pythagorean Theorem; and

(I) defend the choice of a mathematical solution using estimation.

(4) The student knows the function and application 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) determine the performance impact of emerging technologies in welding;

(D) use appropriate personal protective equipment to follow safety measures; and

(E) investigate the use of automated welding machines such as numerical control, computer numerical control, and robotics-controlled welding machines.

(5) The student illustrates welding joint design, symbols, and welds. The student is expected to:

(A) use knowledge of welding blueprints to complete an advanced project; and

(B) inspect projects using welding blueprints.

(6) The student applies the concepts and skills of welding to perform tasks. The student is expected to:

(A) work independently to fabricate a welded project;

(B) work collaboratively with other students to complete a real-world application item; and

(C) troubleshoot equipment.

(7) The student knows the concepts and intricacies of inspections and related codes. The student is expected to:

(A) inspect welding projects of team members;

(B) use advanced codes for weld inspections; and

(C) critique welds of team members.

(8) The student performs advanced oxy-fuel processes on carbon steels. The student is expected to:

(A) observe safe operating practices;

(B) apply safe handling of compressed gases; and

(C) perform advanced cutting processes according to accepted welding standards.

(9) The student performs plasma arc cutting on metals. The student is expected to:

(A) observe safe operating practices; and

(B) perform advanced shape cutting processes according to accepted welding standards.

(10) The student performs shielded metal arc welding on metals. The student is expected to:

(A) use safe operating practices; and

(B) demonstrate advanced knowledge of qualified welding positions using accepted welding standards.

(11) The student performs gas metal arc welding. The student is expected to:

(A) use safe operating practices;

(B) perform fillet welds;

(C) perform groove welds; and

(D) perform welds in all appropriate positions according to accepted welding standards.

(12) The student performs advanced flux cored arc welding on metals. The student is expected to:

(A) use safe operating practices;

(B) perform fillet welds;

(C) perform groove welds; and

(D) perform welds in all appropriate positions according to accepted welding standards.

(13) The student performs gas tungsten arc welding on metals. The student is expected to:

(A) use safe operating practices;

(B) perform fillet welds;

(C) perform groove welds;

(D) perform welds in all appropriate positions according to accepted welding standards; and

(E) perform welds on metals such as carbon steel, stainless steel, pipe, and aluminum.

§130.325. Precision Metal Manufacturing (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Principles of Manufacturing and completed or concurrently enrolled in Algebra I or Geometry.

(b) Introduction. Rapid advances in technology have created new career opportunities and demands in many industries. Precision Metal Manufacturing provides the knowledge, skills, and technologies required for employment in metal technology systems. This course may also address a variety of materials in addition to metal such as plastics, ceramics, and wood. Students 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.

(c) Knowledge and skills.

(1) The student knows 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 team roles such as team leaders and team members;

(D) identify characteristics of good leaders;

(E) identify employers' work expectations;

(F) discuss Equal Employment Opportunity law in the workplace;

(G) use time-management techniques to develop work schedules;

(H) describe how teams measure results; and

(I) develop a method to reward team performance.

(2) 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 skills 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 government regulations.

(3) The student applies advanced academic skills to the requirements of precision metal manufacturing. 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) demonstrate mathematical skills to estimate costs;

(D) interpret blueprints such as schematics, drawings, charts, and diagrams; and

(E) use mathematics as it applies to precision machining operations.

(4) The student knows the concepts and skills that form the technical knowledge required in a machine shop. The student is expected to:

(A) examine the resources found in recognized machinery manufacturing reference materials; and

(B) demonstrate knowledge of the uses of abrasives.

(5) The student knows the function and application of the tools, equipment, technologies, and materials used in a machine shop. The student is expected to:

(A) safely use equipment commonly employed in machine shops;

(B) properly dispose of environmentally hazardous materials used in machine shops;

(C) demonstrate knowledge of numerical control operations; and

(D) demonstrate knowledge of emerging technologies that may affect the machine shop.

(6) The student applies technical knowledge and skills of precision metal manufacturing to simulated and actual work situations. The student is expected to:

(A) demonstrate proficiency in cutting processes such as drilling, turning, boring, milling, and broaching;

(B) use various work mounting procedures on all machines;

(C) properly execute lathe procedures such as threads, turn tapers, polishes, knurls, and bores;

(D) mill flat surfaces, bevels, chamfers, grooves, and key-seats using proper milling procedures;

(E) use proper procedures for surface grinding operations;

(F) accurately machine precision pieces;

(G) demonstrate knowledge of heating metals such as hardening, tempering, annealing, normalizing, and case hardening steel; and

(H) apply technical knowledge and skills in a machine shop to career preparation experiences.

§130.326. Advanced Precision Metal Manufacturing (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Precision Metal Manufacturing and completed or concurrently enrolled in Algebra II.

(b) Introduction. This course is designed to enhance the technical knowledge and skills learned in Precision Metal Manufacturing by allowing students the opportunity to explore career preparation that has resulted from the rapid advances in technology and career demands in high-skill, high-wage opportunities. Advanced Precision Metal Manufacturing provides the knowledge, skills, and technologies required for employment in a globally competitive manufacturing environment. This course may also address a variety of materials in addition to metal such as plastics, ceramics, and wood. Students need to develop concepts and skills related to this system in order to apply them to personal and professional development. Career and technical education supports the integration of academic and career and technical knowledge and skills. Students must 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 future success.

(c) 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) demonstrate how advanced teams function effectively;

(B) apply effective teamwork strategies to solve problems;

(C) distinguish team roles such as team leaders and team members;

(D) evaluate characteristics of effective team leadership;

(E) identify employers' work expectations;

(F) discuss Equal Employment Opportunity law in the workplace;

(G) evaluate team performance in using time-management techniques to develop work schedules; and

(H) develop a method to evaluate team performance.

(2) The student explores the employability characteristics of a successful worker in the global economy. The student is expected to:

(A) apply academic knowledge and skills required for postsecondary education;

(B) use employers' expectations to evaluate student performance and customer satisfaction;

(C) demonstrate the skills 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 skills related to health and safety in the workplace, as specified by appropriate government regulations.

(3) The student applies the technical knowledge and skills of Advanced Precision Metal Manufacturing. The student is expected to:

(A) apply the technical knowledge and skills found in The Machinery's Handbook resource; and

(B) demonstrate knowledge of the uses of abrasives.

(4) The student learns about advanced numerical control machinery. The student is expected to:

(A) research the history of numerical control machines;

(B) distinguish among different types of computer numerical control machines used in the industry;

(C) demonstrate safety rules for numerical control operation;

(D) demonstrate the use of binary numbers to control computer numerical control machines;

(E) demonstrate the methods by which programs can be entered into a controller; and

(F) use appropriate machining terminology to enhance computer numerical control vocabulary.

(5) The student experiences advanced numerical control systems development and implementation. The student is expected to:

(A) demonstrate the types of drive motors used on numerical control machinery;

(B) display the types of loop systems;

(C) explain the Cartesian coordinate system;

(D) differentiate between absolute and incremental positioning; and

(E) illustrate the difference between datum and delta dimensioning.

(6) The student learns the process planning and tool selection within a computer numerical control lab environment. The student is expected to:

(A) develop a process plan;

(B) demonstrate proper numerical control setup;

(C) demonstrate use of tools for hole operations;

(D) perform milling operations;

(E) apply the proper grade of carbide insert for a given material;

(F) use common numerical control turning tool types;

(G) determine the proper spindle revolutions per minute; and

(H) execute proper feed rates on a product.

(7) The student evaluates tool changing and tool registers in the computer numerical control lab environment. The student is expected to:

(A) perform various types of tool changes;

(B) demonstrate quick change tooling used on computer numerical control mills;

(C) demonstrate appropriate tool storage;

(D) demonstrate the proper use of tool registers;

(E) determine tool offset length; and

(F) enter tool offsets for a set up.

(8) The student learns to program coordinates for all computer numerical control machinery in the computer control lab environment. The student is expected to:

(A) explain the program coordinates for hole operations such as drilling, reaming, boring, and tapping;

(B) program hole operation coordinates such as absolute and incremental positioning; and

(C) program milling coordinates such as absolute and incremental positioning.

(9) The student learns two-axis programming for all computer numerical control machinery in the computer numerical control lab environment. The student is expected to:

(A) identify the parts of the computer numerical control program;

(B) describe the word address code format;

(C) write a simple two-axis program using word addresses to perform hole operations; and

(D) write a simple two-axis program using word addresses to perform hole operations and milling operations combined.

(10) The student learns three-axis programming for all computer numerical control machinery in the computer numerical control lab environment. The student is expected to:

(A) write a simple program to perform hole operations using a three-axis machine;

(B) explain an example of a canned cycle;

(C) explain the difference between a modal and non-modal command; and

(D) write a simple program to perform milling operations using a three-axis machine.

(11) The student demonstrates appropriate mathematics for numerical control programming to be used in the computer numerical control lab environment. 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; and

(C) use appropriate mathematical skills to solve problems such as milling and lathe issues.

(12) The student performs cutter radius and diameter compensation for numerical control programming to be used in the computer numerical control lab environment. The student is expected to:

- (A) define cutter radius and cutter diameter compensation;
- (B) describe ramp-on and ramp-off moves;
- (C) identify precautions dealing with the use of cutter compensation; and
- (D) write a program that includes the use of cutter compensation.

§130.327. Flexible Manufacturing (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Algebra I or Geometry.

(b) Introduction. Rapid advances in technology have created new career opportunities and demands in many industries. Flexible Manufacturing provides the knowledge, skills, and technologies required for employment in metal technology systems. Students need to develop knowledge of the concepts and skills related to this system in order to apply them to personal and career development. Career and technical education supports integration of academic and technical knowledge and skills. Students must 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.

(c) 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) describe how teams function;
- (B) use teamwork to solve problems;
- (C) distinguish team roles such as team leaders and team members;
- (D) identify characteristics of good leaders;
- (E) identify employers' work expectations;
- (F) discuss Equal Employment Opportunity law in the workplace;
- (G) use time-management techniques to develop work schedules;
- (H) describe how teams measure results; and
- (I) develop a method to reward team performance.

(2) The student explores the employability characteristics of a successful worker in the global economy. The student is expected to:

- (A) determine advanced knowledge and skills required for postsecondary education;
- (B) identify employers' expectations to foster positive customer satisfaction;
- (C) demonstrate the skills 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 government regulations.

(3) The student applies academic skills to the requirements of metal materials. 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) appraise blueprints, drawings, charts, diagrams, and welding symbols; and
- (C) select algebraic and geometric principles and formulas required for precision measuring operations.

(4) The student differentiates the technical concepts that form the knowledge and skills of metal trades. The student is expected to:

(A) analyze the resources found in The Machinery's Handbook and various American Welding Society specification and code reference books;

(B) examine the theory of shielded metal arc-welding and gas metal arc-welding;

(C) examine the sheet metal industry; and

(D) examine the use of abrasives.

(5) The student differentiates the function and application of the tools, equipment, technologies, and materials used in metal manufacturing. The student is expected to:

(A) safely use hand and power tools and equipment commonly employed in metal manufacturing; and

(B) properly handle and dispose of environmentally hazardous materials used in metal manufacturing.

(6) 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) examine the cutting operations such as drill press, lathe, saw, grinders, and milling machines;

(C) properly 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.

(7) The student applies the technical concepts and skills of the welding industry to simulated and actual work situations. The student is expected to:

(A) examine the cutting processes such as oxy-fuel and plasma;

(B) explore the use of the common types of electrodes;

(C) use various welding machines to weld multiple joints; and

(D) inspect welds.

(8) The student applies the technical concepts and skills of the sheet metal industry to simulated and actual work situations. The student is expected to:

and (A) use mathematics in precision measuring operations;  
(B) interpret blueprints, drawings, charts, and diagrams as related to the sheet metal industry.

(9) 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 as related to sheet metal under American Welding Society code.

(10) 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) safely use equipment; and

(B) properly dispose of environmentally hazardous materials used in sheet metal manufacturing.

(11) 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 sheet metal layouts; and

(B) construct common sheet metal seams.

§130.328. Advanced Flexible Manufacturing (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Geometry, Algebra II, and Flexible Manufacturing.

(b) Introduction. Advanced Flexible Manufacturing builds on knowledge and skills developed in Flexible Manufacturing. Students will develop advanced concepts and skills as they relate 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.

(c) 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) describe how teams function;

(B) use teamwork to solve problems;

(C) distinguish team roles such as team leaders and team members;

(D) identify characteristics of good leaders;

(E) identify employers' work expectations;

(F) discuss Equal Employment Opportunity law in the workplace;

(G) use time-management techniques to develop work schedules;

(H) describe how teams measure results; and

(I) develop a method to reward team performance.

(2) The student explores the employability characteristics of a successful worker in the global economy. The student is expected to:

(A) determine advanced knowledge and skills required for postsecondary education;

(B) identify employers' expectations to foster positive customer satisfaction;

(C) demonstrate the skills 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 government regulations.

(3) The student applies advanced academic skills to the requirements of metal trades. 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 blueprints such as drawings, charts, diagrams, and welding symbols; and

(E) demonstrate calculation of precision measuring operations using algebra, geometry, and trigonometry.

(4) The student knows the advanced concepts that form the technical knowledge and skills of metal trades. The student is expected to:

(A) analyze the resources found in machinery manufacturing reference materials;

(B) demonstrate knowledge of the various welding theories;

(C) examine the sheet metal industry; and

(D) examine the use of advanced abrasives.

(5) The student knows the function and application of the tools, equipment, technologies, and materials used in metal manufacturing. The student is expected to:

(A) safely use equipment commonly employed in metal manufacturing;

(B) properly dispose of environmentally hazardous materials used in metal manufacturing;

(C) demonstrate knowledge of numerical control machining operations;

(D) demonstrate knowledge of the concepts of automated numerical control welding machines; and

(E) demonstrate knowledge of emerging technologies that may affect metal manufacturing.



(6) 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 all appropriate machines;

(B) examine the cutting operations such as drill press, lathe, saw, grinders, and milling machines;

(C) properly 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.

(7) 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) examine the cutting processes such as oxy-fuel and plasma;

(B) explore the use of the common types of electrodes;

(C) use various welding machines to weld multiple joints; and

(D) inspect welds.

(8) 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.

(9) 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 as related to sheet metal under American Welding Society code.

(10) The student knows the function and application of the tools, equipment, technologies, and materials used in sheet metal. The student is expected to:

(A) safely use equipment commonly employed in sheet metal;

(B) properly dispose of environmentally hazardous materials used in sheet metal manufacturing; and

(C) demonstrate knowledge of emerging technologies that may affect sheet metal.

(11) 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 duct work; and

(F) apply skills in sheet metal to career preparation learning experiences.

§130.329. Manufacturing Engineering (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Algebra II, Computer Science I, and Physics.

(b) Introduction. In Manufacturing Engineering, 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. Knowledge and skills in the proper application of Manufacturing Engineering, the design of technology, efficient manufacturing technology, and the assessment of the effects of production technology prepare students for success in the global economy. The study of Manufacturing Engineering 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.

(c) 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) describe how teams function;

(B) use teamwork to solve problems;

(C) distinguish team roles such as team leaders and team members;

(D) identify characteristics of good leaders;

(E) identify employers' work expectations;

(F) discuss Equal Employment Opportunity law in the workplace;

(G) use time-management techniques to develop work schedules;

(H) describe how teams measure results; and

(I) develop a method to reward team performance.

(2) The student explores the employability characteristics of a successful worker in the global economy. The student is expected to:

(A) explore advanced knowledge and skills required for postsecondary education;

(B) identify employers' expectations to foster positive customer satisfaction;

(C) demonstrate the skills 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 knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate government regulations.

(3) The student applies software skills in designing for mobility. The student is expected to:

(A) use computer-aided design software to complete a project;

(B) analyze the results of product testing in a simulated modeling environment; and

(C) fabricate a prototype design of a mechanical part.

(4) The student gains advanced skills in writing programmable logic controls so that multiple robots can work together as a team. The student is expected to:

(A) use computer-integrated manufacturing techniques to simulate a manufacturing process; and

(B) troubleshoot programmable logic circuit devices.

(5) 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.

(6) The student learns skills in production and programming of computer numerical control operations. The student is expected to:

(A) design on the computer numerical control lathe;

(B) produce on the computer numerical control lathe;

(C) design on the computer numerical control mill;

(D) produce on the computer numerical control mill;

and

(E) complete data sheets for plan, do, check, and act forms and projects.

(7) The student knows mechanical, fluid, electrical, and thermal systems. The student is expected to:

(A) use pneumatics devices;

(B) use hydraulics devices;

(C) analyze the effects of heat energy and temperature on products; and

(D) develop an understanding of ventilation such as heating, air conditioning, and refrigeration.

(8) The student analyzes quality control systems. The student is expected to:

(A) apply statistical process control;

(B) determine sprocket hardness values in ascending order;

(C) manually calculate resistor capability indices;

(D) demonstrate the use of software to control instruments; and

(E) analyze attribute and Pareto charts.

§130.330. Practicum in Manufacturing (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid cap-

stone experience for students participating in a coherent sequence of career and technical education courses in the manufacturing cluster.

(b) Introduction. The practicum 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.

(c) Knowledge and skills.

(1) The student demonstrates professional standards as required by business and industry. The student is expected to:

(A) adhere to standard operating procedures;

(B) demonstrate positive work behaviors such as attitudes, 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 such as quality products and services;

(F) model professional appearance such as dress, grooming, and personal protective equipment as appropriate; and

(G) comply with practicum setting safety rules such as regulations to maintain safe 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 innovative solutions;

(B) critically analyze information to determine value to the problem-solving task;

(C) analyze 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 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 to accomplish objectives such as:

(i) demonstrating effective working relationships using interpersonal skills;

(ii) using positive interpersonal skills to work cooperatively with others;

(iii) negotiating effectively to reach decisions;

(iv) demonstrating respect for individuals from different cultures, genders, and backgrounds; and

(v) demonstrating 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 such as technical concepts and vocabulary when analyzing information and following directions;

(B) employ verbal skills when obtaining and conveying information;

(C) use informational texts such as Internet websites and technical materials to review and apply information sources for occupational tasks;

(D) evaluate the reliability of information from informational texts 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.

(5) 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 to improve workflow;

(H) evaluate proficiencies in technical skills; and

(I) 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:

(i) attainment of technical skill competencies;

(ii) licensures or certifications;

(iii) recognition;

(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) resumé;

(vii) samples of work; and

(viii) evaluation from the practicum supervisor; and

(B) present the portfolio to all interested stakeholders such as in a poster presentation.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 475-1497



## SUBCHAPTER N. MARKETING

### 19 TAC §§130.341 - 130.348

The State Board of Education (SBOE) proposes new §§130.341-130.348, concerning the Texas essential knowledge and skills (TEKS) for marketing. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meet-

ing. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career

and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.341. Implementation of Texas Essential Knowledge and Skills for Marketing.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.342. Advertising and Sales Promotion (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Business, Marketing, and Finance.

(b) Introduction. Advertising and Sales Promotion 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, ethical, and legal issues of advertising, historical influences, strategies, and media decision processes as well as integrated marketing communications. The course provides an overview of how communication tools can be used to reach target audiences and increase consumer knowledge.

(c) 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 as production, marketing, management, or finance;

(B) explain the interdependence each business activity has with marketing;

(C) differentiate the implications of business conduct using advertising examples;

(D) illustrate how international marketing affects the advertising industry; and

(E) explain the impact of multiculturalism and multi-generationalism on advertising marketing activities.

(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;

(B) recognize marketing functions and how they relate to advertising;

(C) explain how each component of the marketing mix contributes to successful marketing;

(D) identify the importance of target markets;

(E) describe advantages and disadvantages of market segmentation and mass marketing; and

(F) research trends and emerging technologies affecting advertising marketing.

(3) The student knows the impact and value of diversity. The student is expected to:

(A) express elements of culture and the need for understanding cultural diversity; and

(B) identify how diversity affects sports and entertainment marketing.

(4) The student knows how to use self-development techniques and interpersonal skills to accomplish marketing objectives. The student is expected to:

(A) explain and practice effective interpersonal and team-building skills with coworkers, managers, and customers;

(B) participate in leadership and career development activities such as student organizations and local chambers of commerce; and

(C) identify the role of professional organizations, trade associations, and labor unions in the advertising industry.

(5) The student knows that distribution channel members facilitate the movement of plans. The student is expected to:

(A) explain channels of distribution for advertising marketing plans; and

(B) describe activities of each channel member.

(6) The student knows that financial planning is necessary for the market's success and solvency. The student is expected to:

(A) identify sources of financial assistance;

(B) explain the purpose of financial records such as budget, balance sheet, and income statement; and

(C) discover the relationship of perishability to profit and loss.

(7) 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) distinguish among advertising marketing terms;

(C) list major environmental influences on advertising marketing demand;

(D) research advertising information; and

(E) explain legislation that impacts advertising.

(8) The student knows that a career in advertising marketing 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) research the use of technology in advertising, design, production, and distribution.

(9) The student analyzes that a career in advertising marketing requires knowledge of the industry. The student is expected to:

(A) research careers in the advertising marketing industry; and

(B) list and describe businesses related to advertising.

(10) The student guides staff to improve their success rate and to minimize staff turnover. The student is expected to:

(A) introduce the following five steps of selling:

(i) approach the customer;

(ii) determine needs;

(iii) present the product;

(iv) overcome objections; and

(v) close the sale.

(B) provide information about incoming merchandise to sales staff;

(C) monitor on-floor selling activities; and

(D) control sales activities to meet sales goals and objectives.

(11) The student knows the importance of teamwork, leadership, integrity, honesty, work habits, and organizational skills. The student is expected to:

(A) illustrate 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) categorize employers' expectations and appropriate work habits;

(F) define discrimination, harassment, and equality;

(G) use time-management techniques to develop and maintain schedules and meet deadlines;

(H) express how teams measure their results; and

(I) develop two methods to recognize and reward team performance.

(12) The student evaluates and uses information resources to accomplish specific occupational tasks. The student is expected to:

(A) use informational texts, Internet websites, and technical materials to review and apply information sources for occupational tasks; and

(B) evaluate the reliability and credibility of information from informational texts, Internet websites, and technical materials and resources.

(13) 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 and prepare support materials that will enhance an oral presentation; and

(C) deliver an oral presentation that sustains listener attention and interest.

(14) The student applies active listening skills to obtain and clarify information. The student is expected to:

(A) interpret a given verbal message of information; and

(B) respond with restatement and clarification techniques.

(15) 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;

(C) explain the use of inventory control information; and

(D) analyze data used to make accurate forecasts.

(16) The student knows pricing policies, objectives, and strategies. The student is expected to:

(A) compare and contrast pricing policies;

(B) develop a sample credit policy that could be a useful advertising marketing strategy; and

(C) analyze the price of an advertising marketing product.

(17) The student knows the elements and processes of product planning. The student is expected to:

(A) describe stages of new-product planning;

(B) define product mix; and

(C) identify stages of the product life cycle for new or existing advertising marketing plans.

(18) 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.

(19) The student knows that advertising occurs as steps in a continuous cycle. The student is expected to:

(A) justify between buying for resale and buying for organization use;

(B) explain the importance of identifying needs as the first step of the advertising process; and

(C) prepare a buying plan, complete purchase orders, and process invoices.

(20) The student knows that various types of risks impact business activities. The student is expected to:

(A) categorize business risks; and

(B) explain methods a business uses to control risks such as surveillance and safety training.

(21) The student knows the role of selling in a private enterprise economy. The student is expected to:

(A) explain how selling contributes to economic activity;

(B) describe the process of selecting and advertising merchandise; and

(C) demonstrate steps in the selling process using advertising plans.

§130.343. Fashion Marketing (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Business, Marketing, and Finance.

(b) Introduction. 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.

(c) Knowledge and skills.

(1) The student knows business concepts and how business satisfies economic needs. The student is expected to:

(A) categorize business activities such as production, marketing, management, or finance;

(B) explain the interdependence each business activity has with marketing;

(C) explain the implications of business conduct using fashion industry examples; and

(D) describe how international marketing has affected the fashion industry.

(2) The student knows the importance and functions of marketing. The student is expected to:

(A) rationalize the marketing concept;

(B) describe each marketing function and how it relates to the fashion industry;

(C) explain how each component of the marketing mix contributes to successful marketing;

(D) employ concepts and strategies used to determine and target marketing strategies to a select audience in order to facilitate merchandising activities;

(E) describe advantages and disadvantages of market segmentation and mass marketing; and

(F) research trends and emerging technologies affecting fashion marketing.

(3) 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.

(4) 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) select and employ appropriate reading and communication strategies and learn and use technical concepts and vocabulary in practice;

(B) demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace;

(C) locate, organize, and reference written information from various sources to communicate with others;

(D) evaluate and use information resources to accomplish specific occupational tasks;

(E) use correct grammar, punctuation, and terminology to write and edit documents;

(F) develop and deliver formal and informal presentations using appropriate media to engage and inform audiences;

(G) interpret verbal and nonverbal behaviors to enhance communication with coworkers and others;

(H) apply active listening skills to obtain and clarify information;

(I) develop and interpret tables, charts, and figures to support written and oral communication;

(J) listen and speak with diverse individuals to enhance communication skills; and

(K) exhibit public relations skills to increase internal and external customer satisfaction.

(5) The student knows how to use self-development techniques and interpersonal skills to accomplish marketing objectives. The student is expected to:

(A) explain and practice effective interpersonal and team-building skills with others;

(B) participate in leadership and career development activities; and

(C) explain the role of professional organizations, trade associations, and labor unions in the fashion industry.

(6) 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;

(B) describe activities of each channel member in the fashion industry;

(C) acquire knowledge of distribution systems to understand their role in retailing; and

(D) assess distribution strategies to improve effectiveness and minimize costs.

(7) The student knows that financial planning is necessary for success in the fashion industry. The student is expected to:

(A) identify sources of financial assistance; and

(B) explain the purpose of financial records such as budgets, balance sheets, and income statements.

(8) The student knows the marketing-information system. The student is expected to:

(A) clarify characteristics and purposes of a marketing-information system;

(B) identify benefits and limitations of marketing research;

(C) explain the use of inventory control information such as to prepare financial reports and make buying decisions; and

(D) analyze data used to make accurate retail forecasts.

(9) The student knows concepts and strategies used in determining and adjusting prices to maximize return and meet customer's 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.

(10) 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) develop merchandise plans and budgets to guide selection of retail products;

(C) perform buying activities to obtain products for resale;

(D) analyze vendor performance to choose vendors and merchandise; and

(E) position products and services to acquire desired business image.

(11) 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.

(12) 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 organization use;

(B) explain the importance of identifying needs as the first step of the purchasing process; and

(C) demonstrate knowledge of the fashion buying process such as preparing a buying plan, completing purchase orders, and processing invoices.

(13) The student knows that various types of risks impact business activities. The student is expected to:

(A) categorize business risks; and

(B) explain methods a business uses to control risks such as surveillance and safety training.

(14) The student demonstrates an understanding of concepts and actions to determine client needs and wants and responds through planned, personalized communication to influence purchase decisions and enhance future retail opportunities. The student is expected to:

(A) acquire product knowledge to communicate product benefits and to ensure appropriateness of product for the customer;

(B) employ sales processes and techniques to enhance customer relationships and to increase the likelihood of making sales;

(C) describe support activities to facilitate the selling process;

(D) collect payment from customers to complete customer transactions; and

(E) guide sales staff to improve their success rate and to minimize staff turnover.

(15) 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; and

(F) explain legislation that impacts the fashion industry.

(16) The student knows that a career in fashion marketing requires knowledge of textiles and design. The student is expected to:

(A) clarify how the development of textiles has influenced the fashion industry;

(B) differentiate between natural and synthetic fibers;

(C) explain elements and principles of design in fashion apparel;

(D) list the steps from apparel design to the finished product; and

(E) research the use of technology in fashion design, production, and distribution.

(17) 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.

(18) The student knows that a professional must complete 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;

(B) participate in career-related training and/or degree programs; and

(C) prepare for licensure or certification in a chosen occupational area.

(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 has an understanding of business responsibility to know and abide by laws, regulations, and ethical behavior that affect business operations and transactions. The student is expected to:

(A) apply ethics to demonstrate trustworthiness;

(B) justify the nature of business ethics;

(C) demonstrate responsible behavior, honesty, integrity, and ethical work habits;

(D) describe legal issues affecting businesses;

(E) depict the nature of human resources regulations;

(F) explain the nature of workplace regulations such as Occupational Safety and Health Administration and statutes such as the Americans with Disabilities Act;

(G) discuss employment relationships;

(H) explain the nature of trade regulations; and

(I) describe the impact of antitrust legislation.

(21) The student applies ethical reasoning to a variety of workplace situations to make ethical decisions. The student is expected to:

(A) evaluate alternative responses to workplace situations based on legal responsibilities and employer policies;

(B) analyze alternative responses to workplace situations based on personal or professional ethical responsibilities;

(C) identify personal and long-term workplace consequences of unethical or illegal behaviors;

(D) explain personal and long-term workplace consequences of unethical or illegal behaviors; and

(E) determine and explain the most appropriate response to workplace situations based on legal and ethical considerations.

§130.344. *Entrepreneurship (One-Half to One Credit).*

(a) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Business, Marketing, and Finance.

(b) Introduction. Students will gain the knowledge and skills needed to become an entrepreneur. Students will learn the principles necessary to begin and operate a business. The primary focus of the course is to help students understand the process of analyzing a business opportunity, preparing a business plan, determining feasibility of an idea using research, and developing a plan to organize and promote the business and its products and services. In addition, students understand the capital required, the return on investment desired, and the potential for profit.

(c) Knowledge and skills.

(1) The student demonstrates an understanding of entrepreneurship and the entrepreneurial way of life. The student is expected to:



- neur;
- (A) clarify the terms entrepreneurship and entrepreneur;
- (B) define small business;
- neur;
- (C) illustrate why someone may want to be an entrepreneur;
- (D) explain how integrity and ethical behavior apply to a small business; and
- (E) depict franchising and research franchise opportunities online.
- (2) The student visits local franchises and obtains franchise information such as pamphlets and brochures. The student is expected to:
- (A) obtain advertisements of franchises in local newspapers and other periodicals;
- (B) analyze the advantages and disadvantages of franchising;
- (C) research the Federal Trade Commission requirements of a Uniform Franchise Offering Circular;
- (D) investigate state requirements for disclosure statements prior to purchasing a franchise; and
- (E) explore the issues involved with taking over an existing family business or expanding an existing family business to create additional entrepreneurial opportunities.
- (3) The student identifies the importance of a well-written business plan. The student is expected to:
- (A) categorize a business plan and the need for a well-orchestrated business plan;
- (B) research business plan outlines, resources, and templates using web search engines;
- (C) explain a marketing plan, including price competition, non-price competition, market analysis, competition, marketing research, market segmentation, demographics, and sales forecasting;
- (D) identify a legal plan, including the appropriate form for legal organization, including sole proprietorship, partnership, corporation, and S corporation;
- (E) describe a leadership team;
- (F) develop a financial plan;
- (G) explain the idea of a harvest plan, including selling the business, going public, releasing cash flow, using private equity, and liquidating the business; and
- (H) create and present a well-orchestrated business plan and critically explain the contents.
- (4) The student explains and demonstrates how to meet the needs of the customer. The student is expected to:
- (A) portray how to build customer relationships;
- (B) explain product management;
- (C) describe supply chain management;
- discounts;
- (D) demonstrate how to calculate prices, markups, and
- (E) depict how to determine consumer credit decisions;

- (F) illustrate how to promote the product or service to the consumer;
- (G) create a location plan, including inside and outside sales and service, buying or building a location, renting or leasing a location, home-based business, and online or virtual business location; and
- (H) research the financial plan, including financial requirements and sources of financing.
- (5) The student explains and demonstrates how to meet the needs of a growing organization. The student is expected to:
- (A) explain the role of professional management in the growing organization;
- (B) expound on the role of effective human resources management in the growing business, including recruitment, selection, training, development, compensation, labor relations, employee rights, sexual harassment, and discrimination;
- (C) describe the role of operations and organization in the growing business; and
- (D) defend the need to manage risk in the growing business, including insurance and legal advice and consultation.
- (6) The student identifies financial and accounting terms and forms. The student is expected to:
- (A) clarify and define accounting functions and terms, including:
- (i) assets and types of assets, including cash, accounts receivable, fixed, liquid, illiquid, and inventory;
- (ii) liabilities and types of liabilities;
- (iii) accounts payable;
- (iv) long- and short-term debt;
- (v) owners' equity or net worth;
- (vi) balance sheet and balance sheet equation (A = L + OE);
- (vii) profit and loss statement;
- (viii) revenues and types of revenues;
- (ix) expenses and types of expenses;
- (x) alternative accounting options;
- (xi) internal accounting controls;
- (xii) budgeting; and
- (xiii) cash flow;
- (B) use common accounting forms to demonstrate an understanding of their functions and results;
- (C) identify how to evaluate and measure financial performance such as return on investment, return on assets, and return on equity and debt ratios; and
- (D) participate in leadership and career development activities.
- (7) The student is expected to demonstrate and explain financial and accounting terms and forms. The student is expected to:
- (A) explain and define basic accounting functions and terms, including assets and types of assets, cash, accounts receivable, fixed, liquid, illiquid, and inventory goods on hand;

- (B) identify liabilities and types of liabilities such as accounts payable, long-term debt, and short-term debt;
  - (C) calculate owners' equity or net worth;
  - (D) create a balance sheet understanding the balance sheet equation (A = L + OE);
  - (E) analyze profit and loss statement;
  - (F) evaluate revenues and types of revenues;
  - (G) determine expenses and types of expenses;
  - (H) analyze alternative accounting and internal accounting controls;
  - (I) discuss the importance of budgeting and cash flow;
  - (J) use common accounting forms to demonstrate an understanding of their functions and results;
  - (K) explain how to evaluate and measure financial performance and analyze cost and profit relationships to guide business decision making, including return on investment, return on assets, return on equity, and debt ratios;
  - (L) analyze impact of specialization and division of labor on productivity;
  - (M) explain the impact of the law of diminishing of returns; and
  - (N) describe the concept of economies of scale.
- (8) The student uses leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives. The student is expected to participate in leadership and career development.
- (9) The student knows that offering consumer credit encourages the sale of goods, services, and ideas. The student is expected to:
- (A) identify types of consumer credit;
  - (B) recommend types of consumer credit a business might offer; and
  - (C) develop a credit policy.
- (10) The student knows that international economic factors affect business planning. The student is expected to:
- (A) explain the nature of global trade;
  - (B) describe the determinants of exchange rates and their effects on the domestic economy;
  - (C) explain the impact of cultural and social environments on global trade;
  - (D) explain labor issues associated with global trade;
  - (E) identify strategies for entering international markets; and
  - (F) compare and contrast how situations can influence the entrepreneur's selection of strategies.
- (11) The student knows that pricing has policies, objectives, and strategies. The student is expected to:
- (A) develop and analyze pricing objectives;
  - (B) compare and contrast pricing policies for an entrepreneurial venture; and

- (C) recommend appropriate pricing strategies.
- (12) The student knows the effects of credit on price and profit. The student is expected to:
- (A) explain risks and benefits to entrepreneurs when accepting and extending credit; and
  - (B) describe how credit affects profit and the negotiated price.
- (13) The student knows the importance of managing the pricing structure. The student is expected to:
- (A) communicate the differences among pricing structures for goods, services, and ideas; and
  - (B) develop a pricing structure for an entrepreneurial venture.
- (14) The student knows elements and processes of product planning. The student is expected to:
- (A) describe stages of new-product planning;
  - (B) define the term product mix; and
  - (C) identify stages of the product life cycle for new or existing products.
- (15) The student knows the process for development, implementation, and evaluation of a promotional plan. The student is expected to:
- (A) illustrate the concept of promotional mix;
  - (B) describe the interrelationship of visual merchandising, public relations and publicity, personal selling, and sales promotion with advertising;
  - (C) use appropriate technology to create promotion plans; and
  - (D) apply evaluation strategies to determine promotional campaign effectiveness.
- (16) The student knows that purchasing usually occurs in a continuous cycle. The student is expected to:
- (A) explain how entrepreneurs identify needs;
  - (B) demonstrate the process of selecting suppliers and sources; and
  - (C) analyze and discuss selection of goods and services based on a new business' operational needs.
- (17) The student knows that entrepreneurial risk is the possibility of loss or failure. The student is expected to:
- (A) categorize business risks such as human, natural, and economic;
  - (B) classify business risks as pure or speculative, controllable or uncontrollable, and insurable or uninsurable;
  - (C) explain security precautions as well as health, safety, and worker welfare regulations; and
  - (D) analyze examples of business risks to recommend and defend risk-management strategies.
- (18) The student knows the importance of environmental concerns. The student is expected to:
- (A) discuss the responsibility of business on the local environment;

and (B) analyze the effect of packaging on the environment;

(C) examine the effects of Environmental Protection Agency regulations on business.

(19) The student understands business ethics and legal responsibilities. The student is expected to:

(A) employ ethical actions in obtaining and providing information to acquire the confidence of others by:

(i) explaining ethical considerations in providing information;

(ii) protecting confidential information; and

(iii) determining information appropriate to obtain from a client or another employee;

(B) manage internal and external business relationships to foster positive interactions by:

(i) explaining the nature of human resources regulations;

(ii) explaining the nature of workplace regulations; and

(iii) discussing employment relationships; and

(C) analyze the impact of ethical decisions.

(20) The student acquires foundational knowledge of business laws and regulations to understand their nature and scope. The student is expected to:

(A) identify the legal issues affecting businesses; and

(B) investigate the impact of the legal issues.

(21) The student explains the civil foundations of the legal environment of business to demonstrate knowledge of contracts. The student is expected to:

(A) identify the basic torts relating to business enterprises; and

(B) describe the nature of legally binding contracts.

(22) The student explores the regulatory environment of business to understand the diversity of regulations. The student is expected to:

(A) describe the nature of legal procedure;

(B) discuss the nature of debtor-creditor relationships;

(C) explain the nature of agency relationships;

(D) discuss the nature of environmental law; and

(E) identify the role of administrative law.

(23) The student knows that distribution involves activities associated with the physical movement or transfer of ownership of products from producer to consumer. The student is expected to:

(A) identify activities associated with transportation, storage, product handling, and inventory control;

(B) explain how distribution can add value to goods, services, and ideas; and

(C) determine costs associated with distribution.

(24) The student knows that marketing research is a specific inquiry to solve a problem. The student is expected to:

(A) identify benefits and limitations of marketing research;

(B) identify components of the marketing research process;

(C) explain how to use the marketing research process in order to identify potential markets, analyze demand, forecast sales, and make other decisions; and

(D) use appropriate technology to describe the use of electronic data interchange in marketing information and research activities.

(25) The student knows the process of collecting marketing information to facilitate decision making. The student is expected to:

(A) identify sources of primary and secondary data;

(B) obtain information from customer database;

(C) explain web log data mining for marketing information;

(D) collect information about the competition; and

(E) conduct an analysis of strengths, weaknesses, opportunities, and threats.

§130.345. Retailing and E-tailing (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Business, Marketing, and Finance.

(b) Introduction. Students will have the opportunity to develop skills that involve electronic media techniques necessary for a business to compete in a global economy. Students will coordinate on-line and off-line marketing. Students will demonstrate critical-thinking skills using decision-making models, case studies, various technologies, and business scenarios.

(c) Knowledge and skills.

(1) The student knows how to use information technology tools to manage and perform marketing-research responsibilities. The student is expected to:

(A) assess the impact of technology on marketing research; and

(B) determine types of technology needed by a company.

(2) The student identifies business concepts and understands how retail businesses satisfy economic needs. The student is expected to:

(A) categorize retailing activities such as buying and pricing, transporting and storing, advertising and selling, servicing, financing, and risk taking; and

(B) explain the interdependence each retailing activity has with marketing and business.

(3) The student knows the relationship of business and society. The student is expected to:

(A) understand the ramifications of business conduct;

(B) identify ways that businesses contribute to the community;

(C) analyze the ethical issues and questions of everyday life;

(D) apply critical-thinking skills to ethical issues, problems, and questions;

(E) compare and contrast the roles of cultural diversity in society and understand and respect different ethical opinions;

(F) cite evidence for research as an important element in problem solving; and

(G) develop a logical argument establishing the importance of public discussion in finding answers to difficult ethical issues.

(4) The student identifies the eight key ethical topics and analyzes each topic using a decision-making model. The student is expected to develop an understanding of office ethics, corporate ethics, outside influences on ethics, technology and ethics, communicating and ethics, employee and office ethics, and perceptions and behaviors.

(5) The student knows how to design quantitative marketing research activities to ensure accuracy, appropriateness, and adequacy of data collection efforts. The student is expected to:

(A) explain the nature of actionable research;

(B) compare business objectives with the expected use of the marketing research outcomes;

(C) select appropriate research techniques;

(D) identify the marketing research problem;

(E) determine research approaches such as observation, survey, and experimentation appropriate to the research problem;

(F) select data collection methods such as observations, mail, telephone, Internet, discussion groups, interviews, and scanners;

(G) evaluate the relationship between the research purpose and the marketing research objectives;

(H) estimate the value of research information;

(I) develop sampling plans such as who, how many, and how chosen;

(J) prepare research briefs and proposals;

(K) control sources of error and bias such as response errors, interview errors, non-response errors, and sample design;

(L) develop rating scales such as Likert, semantic differential, and behavior intention scales;

(M) prepare diaries such as product, media-use, and contact; and

(N) create simple questionnaires such as types of questions, question wording, routing, sequencing, length, and layout.

(6) The student knows how to collect marketing information to facilitate decision making. The student is expected to:

(A) explain how the marketing mix contributes to successful retailing;

(B) explain the importance of target markets;

(C) obtain information from customer databases;

(D) obtain marketing information from online sources such as search engines, databases, blogs, and listservs;

(E) explain web log data mining for marketing information;

(F) track environmental changes that impact marketing such as technological changes, consumer trends, economic changes, and regulatory changes;

(G) monitor sales data by volume, product, territory, channel, and time period;

(H) identify transactional data through electronic means such as bar coding, optical scanners, automatic replenishment systems, electronic data interchange, and reader-sorters; and

(I) describe advantages and disadvantages of market segmentation and mass marketing.

(7) The student knows mathematics concepts in retailing and performs calculations manually and with the use of technology. The student is expected to:

(A) complete sales transactions, returns, and adjustments;

(B) apply mathematics concepts in retailing; and

(C) evaluate data in tables, graphs, and charts.

(8) The student communicates interpersonal skills, reports findings to others, and integrates listening, reading, speaking, writing, and nonverbal communication skills effectively. The student is expected to:

(A) demonstrate comprehension of technical and specialized written communication;

(B) communicate effectively in a retail setting;

(C) observe audience reaction and adjust presentation such as pace, tone, vocabulary, and body language to suite the audience;

(D) use effective verbal and nonverbal response strategies to adjust the message in response to audience's facial expressions and body language;

(E) set confidence levels;

(F) test for significant differences, relationships, and associations;

(G) use statistical inferences to make estimates or to test hypotheses;

(H) identify types of modeling techniques;

(I) apply mathematical modeling techniques; and

(J) use statistical software systems.

(9) The student knows the importance of teamwork, leadership, and organizational skills. The student is expected to:

(A) describe how teams function;

(B) participate in 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 equality;

(G) apply time-management techniques to develop and maintain schedules and meet deadlines;

(H) describe how teams measure results;

(I) develop two methods to recognize and reward team performance;

(J) participate in leadership and career development activities; and

(K) identify and practice effective interpersonal and team-building skills.

(10) The student develops basic knowledge of E-tailing principles. The student is expected to:

(A) articulate different types of E-tailing; and

(B) document the advantages and disadvantages of doing business on the web.

(11) The student identifies the use of the Internet as a marketing tool. The student is expected to:

(A) interpret the basic marketing functions and how they apply to E-tailing;

(B) describe criteria for identifying a potential website product or service;

(C) discover and identify the Internet tools and methods used to market goods and services;

(D) depict target marketing and niche marketing in relation to E-tailing;

(E) understand the importance of search engines optimization;

(F) identify and illustrate customer service as it relates to E-tailing;

(G) describe collection and payment options for websites; and

(H) analyze various marketing functions in existing E-tailing sites.

(12) The student identifies the ethical, legal, and security aspects of E-tailing. The student is expected to:

(A) define, identify, and examine security concerns and threats;

(B) identify security procedures and providers;

(C) evaluate appropriate copyright and trademark compliance; and

(D) identify relevant laws and explain how to obtain a copyright or trademark.

(13) The student analyzes and creates an effective E-tailing website. The student is expected to:

(A) develop website goals and objectives;

(B) analyze website structure and design components such as text, graphics, digital images, animation, links, forms, frames, applets, and multimedia components;

(C) identify methods of determining the Internet identity of a business;

(D) explain how to obtain an Internet name;

(E) construct and use appropriate tools in the creation of complex web pages containing forms, data collection, frames, and tables; and

(F) evaluate and confirm appropriate tools in the creation of enhanced web pages.

(14) The student knows that marketing research is a specific inquiry to solve a problem. The student is expected to:

(A) describe types of marketing research used in retailing; and

(B) list benefits and limitations of marketing research when applied to a retail situation.

(15) The student demonstrates knowledge of retail pricing policies, objectives, and strategies. The student is expected to:

(A) compare and contrast pricing policies and strategies among retail establishments; and

(B) explain how business conduct often plays a major role in pricing decisions such as prices after a natural disaster.

(16) The student knows controllable and uncontrollable variables that affect pricing. The student is expected to:

(A) list controllable variables that impact price; and

(B) describe uncontrollable variables that impact price.

(17) The student knows that successful retailers develop, implement, and evaluate promotional plans. The student is expected to:

(A) evaluate promotional objectives used in retail businesses;

(B) explain legal and ethical issues involved in promotion; and

(C) discuss how display, publicity, personal selling, and customer service work together to achieve retail promotional objectives.

(18) The student knows that a retail establishment should project a positive image. The student is expected to:

(A) classify components of image and critique the physical environment of a retail business; and

(B) explain the impact of visual merchandising on retail sales.

(19) The student knows that purchasing occurs in a continuous cycle. The student is expected to:

(A) explain responsibilities of a retail buyer;

(B) use current technology to examine a retail merchandise plan;

(C) identify goods and services retailers use for daily operations; and

(D) describe ways to reduce operational expenses.

(20) The student knows that risks impact retail businesses. The student is expected to:

(A) categorize types of business risks; and

(B) explain methods retailers use to control risks such as surveillance, insurance, and safety training.

(21) The student knows what influences retail customers before they make a purchase. The student is expected to:

(A) discuss the Consumer Bill of Rights; and

(B) identify a customer's buying motives.

(22) The student knows the selling process. The student is expected to:

(A) illustrate the importance of product and service knowledge when presenting sales demonstrations; and

(B) prepare and deliver a sales presentation.

(23) The student knows the important role each retail employee plays in providing exceptional customer service. The student is expected to:

(A) describe employee actions and attitudes that result in customer satisfaction; and

(B) identify management actions and attitudes that result in customer satisfaction.

§130.346. Sports and Entertainment Marketing (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Business, Marketing, and Finance.

(b) Introduction. This course will provide students with a thorough understanding of the marketing concepts and theories that apply to sports and sporting events and entertainment. The areas this course will cover include basic marketing, target marketing and segmentation, sponsorship, event marketing, promotions, sponsorship proposals, and implementation of sports and entertainment marketing plans. This course will also provide students an opportunity to develop promotional plans, sponsorship proposals, endorsement contracts, sports and entertainment marketing plans, and evaluation and management techniques.

(c) 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) explain the implications of business conduct using sports and entertainment examples;

(D) describe how international marketing has affected the sports and entertainment industry; and

(E) explain the impact of multiculturalism and multi-generationalism on sports and entertainment marketing activities.

(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; and

(F) research trends and emerging technologies affecting sports and entertainment marketing.

(3) 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 sports and entertainment markets.

(4) The student knows how to use self-development techniques and interpersonal skills to accomplish marketing objectives. The student is expected to:

(A) explain and practice effective interpersonal and team-building skills;

(B) participate in leadership and career development activities such as student organizations and local chambers of commerce; and

(C) justify the role of professional organizations, trade associations, and labor unions in the sports and entertainment industry.

(5) 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.

(6) The student knows that financial planning is necessary for the marketer's success and solvency. The student is expected to:

(A) identify sources of financial assistance;

(B) critique the purpose of financial records such as budgets, balance sheets, and income statements; and

(C) explain the relationship of perishability to profit and loss.

(7) 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;

(C) explain the use of inventory control information to prepare financial reports and make buying decisions; and

(D) analyze data used to make accurate forecasts.

(8) The student knows pricing policies, objectives, and strategies. The student is expected to:

(A) compare and contrast pricing policies;

(B) develop a sample credit policy that could be a useful sports and entertainment marketing strategy; and

(C) analyze the price of a sports and entertainment marketing product.

(9) The student knows the elements and processes of product planning. The student is expected to:

(A) describe stages of new-product planning;

(B) define product mix; and

(C) identify stages of the product life cycle for new or existing sports or entertainment marketing products.

(10) 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 sports and entertainment marketing goods, services, or ideas; and

(C) analyze a promotional plan for effectiveness.

(11) 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 organization use;

(B) explain the importance of identifying needs as the first step of the purchasing process; and

(C) demonstrate knowledge of the buying process such as preparing a buying plan, completing purchase orders, and processing invoices.

(12) The student knows that various types of risks impact business activities. The student is expected to:

(A) categorize business risks; and

(B) explain methods a business uses to control risks such as surveillance and safety training.

(13) The student identifies the role of selling in a private enterprise economy. The student is expected to:

(A) demonstrate how selling contributes to economic activity;

(B) describe the process of selecting and merchandising sports and entertainment products; and

(C) demonstrate steps in the selling process using sports and entertainment products.

(14) The student identifies the nature and scope of sports and entertainment marketing. The student is expected to:

(A) demonstrate knowledge of the history of sports and entertainment as an industry and how it relates to today's marketplace;

(B) distinguish among sports and entertainment marketing terms;

(C) list major environmental influences on sports and entertainment demand;

(D) research sports and entertainment marketing information; and

(E) explain legislation that impacts sports and entertainment marketing.

(15) 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;

(B) differentiate between buying habits and buying preferences; and

(C) research the use of technology in sports and entertainment marketing design, production, and distribution.

(16) 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; and

(B) list and describe businesses related to sports and entertainment.

(17) The student knows the importance of teamwork, leadership, and organizational skills. The student is expected to:

(A) describe team function;

(B) use teamwork to solve problems;

(C) distinguish between the roles of team leaders and team members;

(D) examine characteristics of good leaders;

(E) identify employers' expectations and appropriate work habits;

(F) define discrimination, harassment, and equality;

(G) use time-management techniques to develop and maintain schedules and meet deadlines;

(H) evaluate how teams measure their results; and

(I) develop two methods to recognize and reward team performance.

(18) The student evaluates and uses information resources to accomplish specific occupational tasks. The student is expected to:

(A) use informational texts, Internet websites, and technical materials to review and apply information sources for occupational tasks; and

(B) evaluate the reliability of information from informational texts, Internet websites, and technical materials and resources.

(19) 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) prepare support materials that will enhance an oral presentation; and

(C) deliver an oral presentation that sustains audience attention and interest.

(20) The student applies active listening skills to obtain and clarify information. The student is expected to:

(A) interpret a given verbal message or information; and

(B) respond with restatement and clarification techniques.

(21) The student identifies reasons a sports property would use marketing. The student will be expected to:

(A) describe activities to market a sports property;

(B) define and simulate sports properties and marketing;

(C) understand why teams use marketing; and

(D) distinguish the different roles in sports.

(22) The student will compare components of the event triangle and summarize exchanges for each. The student is expected to:

- (A) probe the components of the event triangle;
- (B) describe the exchanges developed in the event triangle; and
- (C) explain the effects of media broadcasting on the event triangle.

(23) 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 effect a sponsorship agreement.

(24) 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.

§130.347. Marketing Dynamics (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Principles of Business, Marketing, and Finance.

(b) Introduction. Marketing is a series of dynamic activities that focus on the customer to generate a profitable exchange. Students 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 integrate skills from academic subjects, information technology, interpersonal communication, and management training to make responsible decisions. This course may include paid or unpaid career preparation experience.

(c) Knowledge and skills.

(1) The student knows business concepts and understands how business satisfies economic needs. The student is expected to:

- (A) categorize business activities as production, marketing, management, or finance;
- (B) explain the interdependence each business activity has with marketing;
- (C) express the impact of an international economy on business activities;
- (D) describe advantages and disadvantages of various forms of business ownership; and
- (E) describe the concept of economic resources.

(2) The student knows the nature of business and shows its contribution to society. The student is expected to:

- (A) comprehend the ramifications of business conduct;
- (B) distinguish ways that businesses contribute to their community;
- (C) explain contributions that marketing makes to business and society;
- (D) portray the role of business in society;
- (E) describe types of business activities;
- (F) explain the organizational design of businesses;
- (G) discuss the global environment in which businesses operate;
- (H) depict factors that affect the business environment; and
- (I) express how organizations adapt to today's markets.

(3) The student demonstrates the importance of marketing as well as the functions of marketing. The student is expected to:

- (A) explain the marketing concept; and
- (B) describe each marketing function and how it illustrates the marketing concept.

(4) 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.

(5) 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;
- (D) explain the nature of marketing planning;
- (E) perform market analysis;
- (F) conduct a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis for use in the marketing planning process; and
- (G) create a marketing plan.

(6) 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) recognize relationships among numbers;



- (E) perform mathematical operations;
- (F) predict reasonable estimations;
- (G) create mathematical models from real-life situations;
- (H) determine rate of change mathematically;
- (I) depict methods of collecting relevant data;
- (J) express the organization of useful data; and
- (K) illustrate the use of relational expressions such as equal to, not equal to, greater than, and less than.

(7) The student integrates listening, reading, speaking, writing, and nonverbal communication skills effectively. The student is expected to:

- (A) communicate effectively in a business setting;
- (B) develop effective business correspondence such as memoranda, business letters, and reports using correct grammar, spelling, punctuation, and format;
- (C) use technology in receiving and sending business communication;
- (D) apply written directions to achieve tasks;
- (E) analyze company resources to ascertain policies and procedures;
- (F) employ communication styles appropriate to target audience;
- (G) handle telephone calls in a businesslike manner;
- (H) make oral presentations;
- (I) prepare oral presentations to provide information for specific purposes and audiences;
- (J) identify support materials that will enhance an oral presentation;
- (K) construct support materials that will enhance an oral presentation;
- (L) align presentation strategies to the intended audience; and
- (M) implement multimedia strategies for presentations.

(8) 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.

(9) The student applies information technology as an effective marketing tool. The student is expected to:

- (A) use information technology tools in marketing;
- (B) identify ways that technology impacts business;
- (C) describe the scope of the Internet in the marketing function;

- (D) perform web-search skills;
- (E) demonstrate word-processing skills;
- (F) exhibit presentation applications;
- (G) use database applications; and
- (H) execute spreadsheet applications.

(10) 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) analyze self-assessment information, including interests, aptitudes, and personal traits;
- (B) research and assess employment trends in marketing careers;
- (C) locate and identify career opportunities that appeal to personal career goals;
- (D) match personal interest and aptitudes to selected careers;
- (E) model the steps for locating and securing employment;
- (F) use multiple resources to locate job opportunities;
- (G) develop a resumé;
- (H) prepare a letter of application;
- (I) complete an employment application;
- (J) participate in mock employment interviews;
- (K) list the standards and qualifications that must be met in order to enter a given career; and
- (L) employ critical-thinking and decision-making skills to exhibit qualifications to a potential employer.

(11) 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.

(12) The student knows the impact and value of diversity. The student is expected to:

- (A) identify the effect of languages other than English on marketing;
- (B) explain how diversity affects marketing; and
- (C) probe the impact of multiculturalism and multigenerationalism on marketing activities.

(13) The student knows that marketing begins with a working knowledge of economic concepts. The student is expected to:

- (A) expound on 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.

(14) 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.

(15) The student knows that private enterprise is based on independent decisions by businesses and consumers concerning the right to own property, own a business, compete, make a profit, and exercise consumer choice with limited government involvement. The student is expected to:

(A) determine characteristics of a private enterprise system;

(B) expound on advantages and disadvantages of private enterprise;

(C) express the role profit plays in a market economy;

(D) list examples of competitive business situations; and

(E) identify examples of competitive business situations such as price or nonprice competition.

(16) The student knows that gross domestic product, standard of living, consumer price index, and unemployment figures help measure whether an economy/business is accomplishing its goals. 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;

(F) describe the economic impact of inflation on business;

(G) illustrate unemployment and inflation tradeoffs;

(H) portray the economic impact of interest rate fluctuations;

(I) determine the impact of business cycles on business activities; and

(J) summarize the concept of gross domestic product.

(17) The student knows that changes in the economy include prosperity, recession, depression, and recovery that may be collectively referred to as the business cycle. The student is expected to:

(A) explain the concept of business cycles;

(B) describe the impact that phases of a business cycle have on the economy; and

(C) illustrate economic indicators that can impact marketing activities.

(18) The student knows that international economic factors affect marketing planning. The student is expected to:

(A) distinguish between imports and exports;

(B) clarify the interdependence of nations;

(C) analyze advantages and disadvantages of international trade;

(D) determine global trade's impact on business decision making;

(E) explain the nature of global trade;

(F) describe the determinants of exchange rates and their effects on the domestic economy;

(G) discuss the impact of cultural and social environments on global trade; and

(H) interpret labor issues associated with global trade.

(19) The student knows that distribution systems facilitate the movement of products. The student is expected to:

(A) understand channels of distribution; and

(B) evaluate a distribution plan.

(20) The student knows that distribution involves activities associated with the physical movement or transfer of ownership of products from producer to consumer. The student is expected to:

(A) identify physical distribution activities; and

(B) determine costs associated with distribution.

(21) The student knows that distribution involves stock handling and inventory control. The student is expected to:

(A) describe the receiving process;

(B) relate types of inventory systems;

(C) evaluate inventory shrinkage; and

(D) rationalize the impact of technology on inventory systems.

(22) The student understands the concepts, processes, and skills associated with identifying new ideas, opportunities, and methods of creating or starting a new marketing project or business venture. The student is expected to:

(A) defend the need for entrepreneurial discovery;

(B) examine opportunities for venture creation;

(C) conclude feasibility of venture ideas;

(D) describe entrepreneurial planning considerations;

(E) assess start-up requirements;

(F) probe risks associated with venture;

(G) develop strategies to protect intellectual property;

(H) illustrate components of a business plan to define venture idea;

(I) investigate processes used to acquire adequate financial resources for venture creation and start-up;

(J) determine a venture's human resource needs;

(K) evaluate risk-taking opportunities; and

(L) describe the opportunities for entrepreneurship in a given industry.

(23) 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;
- (B) explain the purpose of a credit contract; and
- (C) predict the impact of credit legislation.

(24) 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;
- (G) explain the use of technology in the pricing function; and
- (H) analyze legal considerations for pricing.

(25) 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) consider the concept of promotional mix;
- (D) define the role of promotion as a marketing function;
- (E) list the elements of the promotional mix;
- (F) describe the use of business ethics in promotion;
- (G) describe the use of technology in the promotion function;
- (H) explore the regulation of promotion;
- (I) illustrate types of advertising media;
- (J) convey word-of-mouth channels used to communicate with targeted audiences;

- (K) explain the nature of direct marketing channels;
- (L) model communication channels used in sales promotion; and
- (M) describe communication channels used in public relations activities.

(26) 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.

(27) 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.

(28) 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 and skills related to health and safety in the workplace.

(29) The student knows what influences customers before they make a purchase. The student is expected to:

- (A) differentiate among a feature, an advantage, and a benefit;
- (B) compare and contrast between consumer and organizational buying behavior;
- (C) determine customer needs and wants;
- (D) classify buying motives;
- (E) analyze how customers and organizations apply the decision-making process;
- (F) identify major influences on buying behavior; and
- (G) acquire information about customer needs.

(30) The student knows how marketers use the selling process. The student is expected to:

- (A) locate product information;
- (B) approach a customer to open a sale;
- (C) illustrate why the approach should have a theme that is related to the presentation and the customer's buying motives;
- (D) incorporate questioning and probing techniques;
- (E) prepare a sales presentation;
- (F) demonstrate how to overcome objections; and
- (G) demonstrate how to close a sale.

(31) 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;
- (F) analyze the nature of customer relationship management;
- (G) describe the role of ethics in customer relationship management; and

(H) describe the use of technology in customer relationship management.

(32) The student knows the responsibility of businesses 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) demonstrate responsible behavior, honesty, integrity, and ethical work habits;

(D) describe legal issues affecting businesses;

(E) defend the nature of human resources regulations;

(F) explain the nature of workplace regulations such as Occupational Safety and Health Administration and statutes such as the Americans with Disabilities Act;

(G) discuss employment relationships;

(H) illustrate the nature of trade regulations; and

(I) describe the impact of antitrust legislation.

(33) The student applies ethical reasoning to a variety of workplace situations in order to make ethical decisions. The student is expected to:

(A) analyze alternative responses to workplace situations based on legal responsibilities and employer policies;

(B) evaluate alternative responses to workplace situations based on personal or professional ethical responsibilities;

(C) identify personal and long-term workplace consequences of unethical or illegal behaviors;

(D) depict personal and long-term workplace consequences of unethical or illegal behaviors;

(E) investigate the most appropriate response to workplace situations based on legal and ethical considerations; and

(F) explain the most appropriate response to workplace situations based on legal and ethical considerations.

(34) 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;

(B) participate in career-related training or degree programs; and

(C) prepare for licensure or certification in a chosen occupational area.

§130.348. Practicum in Marketing Dynamics (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grade 12. Prerequisite: Marketing Dynamics.

(b) Introduction. Through course required employment, students 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 create the marketing mix. This course covers technology, communication, and customer-service skills. The practicum 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. The practicum course is a paid or unpaid ex-

perience for students participating in a coherent sequence of career and technical education courses in marketing education.

(c) Knowledge and skills.

(1) The student knows business concepts and how business satisfies economic needs. The student is expected to:

(A) analyze the impact of an international economy on business activities; and

(B) determine the impact of multiculturalism and multi-generationalism on business activities.

(2) The student knows marketing mix. The student is expected to:

(A) explain the relationship among goals, tactics, and strategies pertaining to the marketing mix; and

(B) illustrate factors that may cause marketing strategies to change.

(3) The student knows the concepts of market and market identification. The student is expected to:

(A) research market segmentation trends; and

(B) analyze types of segmentation in markets.

(4) The student knows that the United States free enterprise system offers marketers entrepreneurial opportunities. The student is expected to:

(A) portray the importance of the United States free enterprise system in encouraging opportunities for entrepreneurial ventures; and

(B) analyze a proposed business plan.

(5) The student knows that management is the process of achieving goals through the use of human resources, technology, and material resources. 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; and

(E) model techniques to use in difficult customer relations situations.

(6) The student identifies the need for professional and career development. The student is expected to:

(A) identify types of journals and periodicals of use to marketers; and

(B) explain the role of professional organizations, associations, and labor unions.

(7) The student applies mathematical concepts in management. The student is expected to:

(A) make accurate estimates and projections; and

(B) interpret data found in financial reports.

(8) The student integrates listening, reading, speaking, writing, and nonverbal communication skills effectively. The student is expected to:

setting;

- (A) communicate effectively in a business management
- (B) demonstrate rules of order in a business meeting;
- (C) develop effective business correspondence; and
- (D) use technology in receiving and sending business

communication.

(9) The student knows how to use self-development techniques and interpersonal skills to accomplish marketing management objectives. The student is expected to:

- (A) demonstrate effective interpersonal and team-building skills involving situations with coworkers, managers, and customers;

- (B) plan leadership and career development activities;

and

- (C) develop employability skills for advancement.

(10) The student knows the importance of emerging trends and technologies in marketing. The student is expected to:

- (A) discuss trends affecting marketing;

- (B) research emerging technologies in marketing; and

- (C) select and use the tools of information technology in marketing.

(11) The student knows the impact and value of diversity. The student is expected to:

- (A) identify the effect of languages other than English on marketing;

- (B) portray how cultural diversity affects marketing;

and

- (C) discover legal responsibilities of diversity.

(12) The student knows that marketing begins with a working knowledge of economic concepts. The student is expected to:

- (A) describe fundamental economic concepts used in marketing;

- (B) use information about supply and demand to predict their influence on pricing; and

- (C) describe ways in which marketing affects utility.

(13) The student knows that private enterprise is based on independent decisions by businesses and consumers. The student is expected to:

- (A) explain ways to increase productivity and profit;

and

- (B) discuss advantages and disadvantages of specialization.

(14) The student knows that gross domestic product, standard of living, consumer price index, and unemployment figures help measure whether an economy is accomplishing its goals. The student is expected to:

- (A) research and report on the current economic climate with regard to gross domestic product, unemployment, standard of living, and other economic indicators; and

- (B) depict why the gross domestic product is an accurate indicator of the economic health of a nation.

(15) The student knows that changes in the economy include prosperity, recession, depression, and recovery that may be collectively referred to as the business cycle. The student is expected to:

- (A) describe the impact that a business cycle has on an economy;

- (B) explain how businesses react to economic changes;

and

- (C) clarify the impact of government on business activities to make informed economic decisions.

(16) The student identifies international economic factors that affect marketing planning. The student is expected to:

- (A) identify strategies for entering international markets; and

- (B) illustrate cultural, economic, and political factors considered when engaging in international trade.

(17) 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.

(18) 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.

(19) 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 expectation;

- (C) identify steps in new-product planning; and

- (D) define the product life cycle.

(20) The student knows the importance of branding and extended product features. The student is expected to:

- (A) define branding elements;

- (B) explain applicable grades and standards;

- (C) distinguish between warranties and guarantees; and

- (D) design a product package, brand, and label.

(21) The student analyzes the laws and regulations that affect new product development. The student is expected to:

(A) differentiate among laws, regulations, and self-regulatory measures for new-product development;

(B) break down consumer protection provisions of government agencies; and

(C) clarify how business is affected by government regulation of consumer protection.

(22) The student knows that advertising is the paid form of nonpersonal communication of an identified sponsor's products. The student is expected to:

(A) calculate the cost-effectiveness of media; and

(B) create an advertising campaign.

(23) The student knows that the physical environment of a business should project a positive image. The student is expected to:

(A) evaluate image; and

(B) analyze factors involved in facilities design, maintenance, and improvement.

(24) 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) demonstrate verbal skills in marketing communications;

(C) distinguish activities that would encourage positive public relations; and

(D) analyze potential impact of publicity and offer possible strategies for dealing with its impact.

(25) The student knows that sales promotion activities or materials offer customers a direct incentive to buy. The student is expected to:

(A) catalog examples of sales promotion materials; and

(B) analyze how sales promotion materials encourage sales.

(26) 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.

(27) The student knows that businesses need goods and services for daily operation. The student is expected to:

(A) analyze the selection of goods and services based on a business' operational needs; and

(B) compare and contrast terms offered by suppliers.

(28) 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.

(29) The student knows methods to determine client needs and wants and responds through planned, personalized communication to influence purchase decisions and enhance future business opportunities. The student is expected to:

(A) acquire a foundational knowledge of selling to understand its nature and scope;

(B) explain how product knowledge is essential to communicate product benefits to ensure appropriateness of product for the customer;

(C) diagram sales processes and techniques to enhance customer relationships and to increase the likelihood of making sales; and

(D) prepare and deliver a sales presentation.

(30) 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.

(31) 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.

(32) 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;

(B) participate in career-related training or degree programs; and

(C) prepare for licensure or certification in a chosen occupational area.

(33) 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.

(34) 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.

(35) 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 equality;

(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.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Director, Policy Coordination

Texas Education Agency

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For further information, please call: (512) 475-1497



## SUBCHAPTER O. SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

### 19 TAC §§130.361 - 130.375

The State Board of Education (SBOE) proposes new §§130.361-130.375, concerning the Texas essential knowledge and skills (TEKS) for science, technology, engineering, and mathematics. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local

district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.361. Implementation of Texas Essential Knowledge and Skills for Science, Technology, Engineering, and Mathematics.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.362. Concepts of Engineering and Technology (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-10.

(b) Introduction. Concepts of Engineering and Technology provides an overview of the various fields of science, technology, engineering, and mathematics and their interrelationships. Students will use 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 and will be able to make informed decisions regarding a coherent sequence of subsequent courses. Further, students will have worked on a design team to develop a product or system. Students will use multiple software applications to prepare and present course assignments.

(c) 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 science;

(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 and contrast engineering, science, and technology careers; and

(F) conduct and present research on emerging and innovative technology.

(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) use sketching and computer-aided drafting and design to present ideas; and

(D) maintain a portfolio.

(3) The student uses appropriate tools and demonstrates safe work habits. The student is expected to:

(A) master relevant safety tests;

(B) follow safety guidelines as described in various manuals, instructions, and regulations;

(C) recognize the classification of hazardous materials and wastes;

(D) dispose of hazardous materials and wastes appropriately;

(E) perform maintenance and safely handle and store laboratory equipment;

(F) describe the implications of negligent or improper maintenance; and

(G) demonstrate the use of precision measuring instruments.

(4) The student describes the factors that affect the progression of technology and 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 describes the importance of teamwork, leadership, integrity, honesty, ethics, work habits, and organizational skills. The student is expected to:



- (A) describe and demonstrate how teams function;
- (B) identify characteristics of good team leaders and team members;
- (C) work in a team face-to-face or in a virtual environment to solve problems;
- (D) discuss the principles of ideation;
- (E) identify employers' expectations and appropriate work habits;
- (F) differentiate between discrimination, harassment, and equality;
- (G) describe ethical behavior and decision making through use of examples;
- (H) use time-management techniques to develop team schedules to meet project objectives; and
- (I) complete projects according to established criteria.

(6) 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 the fundamental processes needed for a project, including design and prototype development;
- (B) identify the chemical, mechanical, and physical properties of engineering materials;
- (C) use problem-solving techniques to develop technological solutions;
- (D) use consistent units for all measurements and computations; and
- (E) assess risks and benefits of a design solution.

(7) The student understands the opportunities and careers in fields related to biotechnology. The student is expected to:

- (A) describe the fields of biotechnology;
- (B) describe career opportunities in biotechnology;
- (C) apply design concepts to problems in biotechnology;
- (D) identify fields related to biotechnology; and
- (E) identify currently emerging issues in biotechnology.

(8) The student understands the opportunities and careers in fields related to process control and automation systems. The student is expected to:

- (A) describe applications of process control and automation systems;
- (B) describe career opportunities in process control and automation systems;
- (C) apply design concepts to problems in process control and automation systems;
- (D) identify fields related to process control and automation systems; and
- (E) identify emerging issues in process control and automation systems.

(9) The student understands the opportunities and careers in fields related to physical and mechanical systems. The student is expected to:

- (A) describe the applications of physical and mechanical systems;
- (B) describe career opportunities in physical and mechanical systems;
- (C) apply design concepts to problems in physical and mechanical systems; and
- (D) identify emerging issues in physical and mechanical systems.

(10) The student participates in a team-based culminating project. The student is expected to:

- (A) apply the design process in a team;
- (B) assume different roles as a team member within the project;
- (C) maintain an engineering notebook for the project;
- (D) develop and test the model for the project; and
- (E) present the project using clear and concise communication skills.

§130.363. *Biotechnology (One to Two Credits).*

(a) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Concepts of Engineering and Technology.

(b) Introduction. This course provides an overview of biotechnology, bioengineering, and related fields. Topics include genetics, cell structure, proteins, nucleic acids, and the impact of immunological events in biotechnology. Students 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.

(c) Knowledge and skills.

(1) The student explores biotechnology career opportunities. The student is expected to:

- (A) determine interests and aptitudes through conversations with biotechnology professionals;
- (B) identify career options in the field of biotechnology;
- (C) identify reliable sources of career information;
- (D) research interests, knowledge, educational level, abilities, and skills needed in a biotechnology-related occupation;
- (E) seek a mentor in the biotechnology area;
- (F) identify conventional and non-conventional career opportunities that match interests and aptitudes;

(G) research applications of biotechnology and biomaterials in the areas of medicine, the environment, and pharmaceutical, agricultural, and industrial settings; and

(H) use technology to research biotechnology topics, identify pertinent scientific articles, obtain articles of interest, and write a formal research paper in the format used by academic and professional journals and magazines.

(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 current issues;

(C) discuss legal and technology issues for at least two biotechnology related areas; and

(D) compare and contrast examples of objective and subjective scientific, economic, and political data and positions used to defend biotechnology views.

(3) The student examines federal, state, local, and industry regulations as applied to biotechnical processes through library research and Internet research. The student is expected to:

(A) identify local, state, and federal agencies responsible for regulating the biotechnology industry;

(B) identify professional organizations participating in the development of biotechnology policies;

(C) identify and define terms related to biotechnology regulations; and

(D) outline the methods and procedures used in biotechnology laboratories to follow and enforce local, state, and federal regulations, including 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;  
and

(C) investigate and report on career opportunities in the biotechnology industry sectors.

(5) The student researches and exhibits employability skills that support a career in the biotechnology industry. The student is expected to:

(A) demonstrate verbal, nonverbal, written, and electronic communication skills;

(B) demonstrate skills used to secure and maintain employment;

(C) demonstrate appropriate workplace etiquette; and

(D) display productive work habits and attitudes.

(6) The student investigates the origins of waste and examines the relationship of biotechnology to resource recovery. The student is expected to:

(A) investigate at least three end products from biotechnology manufacturing processes;

(B) investigate the effects of waste on environmental and biological life cycles;

(C) investigate the impacts of waste on the environment;

(D) analyze the results of manufacturing refuse;

(E) explain the negative impacts of waste with respect to the individual, society, and the global population;

(F) research solutions to biological waste with respect to commercial applications through investigation of various pollution waste treatments using natural organisms;

(G) investigate biotechnology as it relates to health and well-being; and

(H) cite evidence regarding regulations, patents and public policy, design development and testing, and safety.

(7) The student examines the relationship of biotechnology to the development of commercial products. The student is expected to:

(A) identify the ability to change or enhance genetic characteristics;

(B) identify applications of genetic engineering;

(C) identify applications of nanotechnology in biotechnology;

(D) identify applications of bioinformatics in biotechnology;

(E) identify the applications of biotechnology in medicine, forensics, and law enforcement; and

(F) research ethical considerations, laws, and regulations governing genetic engineering and nanotechnology.

*§130.364. Advanced Biotechnology (Two to Three Credits).*

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisites: Biology and Chemistry. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum).

(b) Introduction.

(1) Students enrolled in this course 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.

(2) Students will conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Advanced Biotechnology study a variety of topics that include structures and functions of cells, nucleic acids, proteins, and genetics.

(3) 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 inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation can be experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

(5) Scientific decision making is a way of answering questions about the natural world. Students should be able to distinguish between scientific decision-making methods and ethical and social decisions that involve the application of scientific information.

(6) A system is a collection of cycles, structures, and processes that interact. All systems have basic properties that can be described in terms of 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 scientific.

ically tested. 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.

(c) Knowledge and skills.

(1) The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. These investigations must involve actively obtaining and analyzing data with physical equipment, but may also involve experimentation in a simulated environment as well as field observations that extend beyond the classroom. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations, including chemical, electrical, and fire safety, and safe handling of live and preserved organisms;

(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials;

(C) demonstrate appropriate safety procedures, guidelines, and chemical hygiene plan;

(D) maintain required safety training, including location and understanding of interpretation of material safety data sheets;

(E) comply with federal and state safety regulations as specified by Occupational Safety and Health Administration and other regulatory agencies as appropriate;

(F) identify and obey safety symbols and signs;

(G) maintain clean and well organized work areas;

(H) dispose of equipment, glassware, and biologics according to laboratory policies;

(I) recognize common laboratory hazards;

(J) observe procedures for the safe use of instruments, gas cylinders, and chemicals; and

(K) maintain safety and personal protection equipment.

(2) The student uses scientific methods and equipment during laboratory and field investigations. The student is expected to:

(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(3) of this section;

(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories;

(C) know that 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;

(D) distinguish between scientific hypotheses and scientific theories;

(E) plan and implement investigative procedures, including asking questions, formulating testable hypotheses, and selecting, handling, and maintaining appropriate equipment and technology;

(F) collect data individually or collaboratively, make measurements with precision and accuracy, record values using appropriate units, and calculate statistically relevant quantities to describe data, including mean, median, and range;

(G) demonstrate the use of course apparatus, equipment, techniques, and procedures;

(H) organize, analyze, evaluate, build models, make inferences, and predict trends from data;

(I) perform calculations using dimensional analysis, significant digits, and scientific notation; and

(J) communicate valid conclusions using essential vocabulary and multiple modes of expression such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

(3) The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials;

(C) draw inferences based on data related to promotional materials for products and services;

(D) evaluate the impact of research and technology on scientific thought, society, and the environment;

(E) describe the connection between biotechnology and future careers; and

(F) research and describe the history of biotechnology and contributions of scientists.

(4) The student explores the emerging field of biotechnology. The student is expected to:

(A) define biotechnology as related to new and emerging occupations;

(B) explore engineering and bioinformatics;

(C) create a timeline of historical biotechnology research and development; and

(D) research career opportunities in fields such as molecular, forensic, medical, regulatory, and agricultural biotechnology.

(5) The student analyzes bacterial, plant, and animal cell structures. The student is expected to:

(A) distinguish among bacterial, plant, and animal cells;

(B) describe the major structures in a bacterial cell and their functions such as pili, capsule, and flagella;

(C) describe the major structures in a plant cell and their functions such as cell wall and chloroplasts;

(D) describe the major structures in an animal cell and their functions such as nucleus, nucleolus, cell membrane, mitochon-

dria, ribosomes, Golgi apparatus, chromatin, cytoplasm, and endoplasmic reticulum; and

(E) identify cells using the microscope.

(6) The student understands the role of genetics in the biotechnology industry. The student is expected to:

(A) explain terms related to molecular biology such as nucleic acids, nitrogen bases, amino acids, transcription, translation, polymerase, and protein synthesis;

(B) describe the structure of a nucleotide;

(C) identify the nitrogen bases of deoxyribonucleic acid and ribonucleic acid;

(D) explain how nucleotides join together to form a double-helical deoxyribonucleic acid molecule;

(E) describe the deoxyribonucleic acid and ribonucleic acid replication process;

(F) illustrate the process of protein synthesis;

(G) define genome and gene expression;

(H) evaluate the significance of ethics and regulations as it relates to gene expression; and

(I) summarize the role of genetics in the biotechnology industry.

(7) The student analyzes the importance of recombinant deoxyribonucleic acid technology and genetic engineering. The student is expected to:

(A) define recombinant deoxyribonucleic acid technology as it relates to the biotechnology industry;

(B) explain how recombinant deoxyribonucleic acid technology is used to clone genes;

(C) explain the role of tissue cultures to genetic modification procedures;

(D) propagate plant cultures;

(E) maintain proper growing conditions for plant tissue cultures;

(F) explain the role of restriction enzymes and plasmid deoxyribonucleic acid;

(G) describe the vectors commonly used, including bacteriophage vectors;

(H) discuss the polymerase chain reaction and its application in recombinant deoxyribonucleic acid technology; and

(I) perform restriction digests.

(8) 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; and

(B) analyze policies and procedures used in the biotechnology industry such as animal research laboratories.

(9) The student performs standard biotechnology laboratory procedures. The student is expected to:

(A) operate laboratory equipment such as a microscope, thermocycler, hood, pH meter, stirrers, balance, mixers, autoclave, power supply, shakers, dry heat oven, incubators, and Bunsen burners;

(B) practice measuring volumes and weights to industry standards;

(C) analyze data and perform calculations and statistical analysis as it relates to biotechnology laboratory experiments;

(D) demonstrate and show proficiency in titration and pipetting techniques;

(E) identify microorganisms using staining methods such as the Gram stain, methylene-blue stain, and acid-fast staining;

(F) document laboratory results; and

(G) investigate how laboratory techniques vary in different industry sectors.

(10) The student prepares solutions and reagents for the biotechnology laboratory. The student is expected to:

(A) practice aseptic technique;

(B) prepare, dispense, and monitor physical properties of stock reagents, buffers, media, and solutions;

(C) calculate and prepare a dilution series; and

(D) determine acceptability and optimum conditions of reagents for experimentation.

(11) The student performs advanced biotechnology laboratory procedures. The student is expected to:

(A) explain the importance of media components to the outcome of cultures;

(B) isolate, maintain, and store pure cultures;

(C) prepare seed inoculum;

(D) perform plating techniques such as the Kirby-Bauer method;

(E) precipitate and solubilize proteins;

(F) isolate and interpret proteins using electrophoresis; and

(G) perform nucleic acid sequencing procedures.

(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 such as trending of data.

(13) 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;

(B) categorize the biotechnology laboratory procedures included in each sector; and

(C) compare the different applications used in biotechnology laboratory procedures of each sector.

§130.365. Engineering Design and Presentation (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Concepts of Engineering and Technology.

(b) Introduction. Students enrolled in this course will demonstrate knowledge and skills of the process of design as it applies to engineering fields using multiple software applications and tools necessary to produce and present working drawings, solid model renderings, and prototypes. Students will use a variety of computer hardware and software applications to complete assignments and projects. Through implementation of the design process, students will transfer advanced academic skills to component designs. Additionally, students explore career opportunities in engineering, technology, and drafting and what is required to gain and maintain employment in these areas.

(c) Knowledge and skills.

(1) The student gains knowledge of and demonstrates the skills necessary for success in the workplace. The student is expected to:

(A) distinguish the differences between an engineering technician, engineering technologist, and engineer;

(B) identify employment and career opportunities;

(C) investigate and work toward industry certifications;

(D) demonstrate the principles of teamwork related to engineering and technology;

(E) identify and use appropriate work habits;

(F) demonstrate knowledge related to governmental regulations, including health and safety;

(G) discuss ethical issues related to engineering and technology and incorporate proper ethics in submitted projects;

(H) demonstrate respect for diversity in the workplace;

(I) demonstrate appropriate actions and identify consequences relating to discrimination, harassment, and equality;

(J) demonstrate effective oral and written communication skills using a variety of software applications and media; and

(K) explore career preparation learning experiences, including, but not limited to, job shadowing, mentoring, and apprenticeship training.

(2) The student participates in team projects in various roles. The student is expected to:

(A) understand and discuss how teams function;

(B) use teamwork to solve problems; and

(C) serve as a team leader and a team member and demonstrate appropriate attitudes while participating in team projects.

(3) The student develops skills for managing a project. The student is expected to:

(A) use time-management techniques to develop and maintain work schedules and meet deadlines;

(B) 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) follow 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 regulations;

(D) dispose of hazardous materials and wastes appropriately;

(E) perform maintenance on selected tools, equipment, and machines;

(F) handle and store tools and materials correctly; and

(G) describe the results of negligent or improper maintenance.

(5) The student applies the concepts of sketching and skills associated with computer-aided drafting and design. The student is expected to:

(A) sketch single- and multi-view projections;

(B) prepare orthographic and pictorial views;

(C) prepare auxiliary views;

(D) prepare section views;

(E) project points and construct lines to build geometric forms;

(F) construct true length of lines and true size of planes by the revolution method;

(G) draw developments using radial line, parallel line, and triangulation methods;

(H) construct piercing points and intersection of planes using edge-view and cutting plane methods;

(I) prepare and revise annotated multi-dimensional production drawings in computer-aided drafting and design to industry standards; and

(J) demonstrate knowledge of effective file structure and management.

(6) The student uses engineering design methodologies. The student is expected to:

(A) understand and discuss principles of ideation;

(B) think critically, identify the system constraints, and make fact-based decisions;

(C) use rational thinking to develop or improve a product;

(D) apply decision-making strategies when developing solutions;

(E) use an engineering notebook to record prototypes, corrections, and/or mistakes in the design process; and

(F) use an engineering notebook to record the final design, construction, and manipulation of finished projects.

(7) The student applies concepts of engineering to specific problems. The student is expected to:

(A) use a variety of technologies to design components;

(B) use tools, laboratory equipment, and precision measuring instruments to develop prototypes;

(C) research applications of different types of computer-aided drafting and design software; and

(D) use multiple software applications for concept presentations.

(8) The student designs products using appropriate design processes and techniques. The student is expected to:

(A) interpret engineering drawings;

(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 engineering drawings to industry standards; and

(E) describe potential patents and the patenting process.

(9) The student builds a 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.

§130.366. Advanced Engineering Design and Presentation (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Engineering Design and Presentation.

(b) Introduction. This course will provide students the opportunity to master computer software applications in a variety of engineering and technical fields. This course further develops the process of engineering thought and application of the design process.

(c) Knowledge and skills.

(1) The student gains knowledge of and demonstrates the skills necessary for success in the workplace. The student is expected to:

(A) distinguish the differences between an engineering technician, engineering technologist, and engineer;

(B) identify employment and career opportunities;

(C) investigate and work toward industry certifications;

(D) demonstrate the principles of teamwork related to engineering and technology;

(E) identify and use appropriate work habits;

(F) demonstrate knowledge related to governmental regulations, including health and safety;

(G) discuss ethical issues related to engineering and technology and incorporate proper ethics in submitted projects;

(H) demonstrate respect for diversity in the workplace;

(I) demonstrate appropriate actions and identify consequences relating to discrimination, harassment, and equality;

(J) demonstrate effective oral and written communication skills using a variety of software applications and media; and

(K) explore career preparation learning experiences, including, but not limited to, job shadowing, mentoring, and apprenticeship training.

(2) The student participates in team projects in various roles. The student is expected to:

(A) understand and discuss how teams function;

(B) use teamwork to solve problems; and

(C) serve as a team leader and a team member and demonstrate appropriate attitudes while participating in team projects.

(3) The student develops skills for managing a project. The student is expected to:

(A) use time-management techniques to develop and maintain work schedules and meet deadlines;

(B) complete projects 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 applies the concepts and skills of computer-aided drafting and design software to perform the following tasks. The student is expected to:

(A) prepare drawings to American National Standards Institute and International Standards Organization graphic standards;

(B) customize software user interface by creating blocks, attributes, and symbol libraries;

(C) prepare advanced sectional views and isometrics;

(D) draw detailed parts, assembly diagrams, and sub-assembly diagrams;

(E) indicate tolerances and standard fittings using appropriate library functions;

(F) prepare highway plan and profile drawings, including utility locations;

(G) prepare functional block diagrams for project management and decision making;

(H) prepare functional wiring harness diagrams;

(I) prepare electronic schematics to industry standards, including logic diagrams;

(J) prepare advanced development drawings; and

(K) identify the functions of computer hardware devices.

(6) The student practices safe and proper work habits. The student is expected to:

(A) master relevant safety tests;

(B) follow 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 regulations;

(D) dispose of hazardous materials and wastes appropriately;

(E) perform maintenance on selected tools, equipment, and machines;

(F) handle and store tools and materials correctly; and

(G) describe the results of negligent or improper maintenance.

(7) The student uses engineering design methodologies. The student is expected to:

(A) understand and discuss principles of system ideation;

(B) think critically, identify the system constraints, and make fact-based decisions;

(C) use rational thinking to develop or improve a system;

(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 record prototypes, corrections, and/or mistakes in the design process; and

(H) use an engineering notebook to record the final design, construction, and manipulation of finished projects.

(8) The student applies concepts of engineering to specific problems. The student is expected to:

(A) use a variety of technologies to design systems;

(B) use tools, laboratory equipment, and precision measuring instruments to develop prototypes;

(C) research applications of different types of computer-aided drafting and design software; and

(D) use multiple software applications for concept presentations.

(9) The student designs systems using appropriate design processes and techniques. The student is expected to:

(A) interpret engineering drawings;

(B) identify areas where quality, reliability, and safety can be designed into a system;

(C) improve a system design to meet a specified need, including properties of materials selected;

(D) produce engineering drawings to industry standards; and

(E) describe potential patents and the patenting process.

(10) The student builds a 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.

§130.367. Engineering Mathematics (One Credit).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Algebra II.

(b) Introduction. Engineering Mathematics is a course where students solve and model robotic design problems. Students use a variety of mathematical methods and models to represent and analyze problems involving data acquisition, spatial applications, electrical measurement, manufacturing processes, materials engineering, mechanical drives, pneumatics, process control systems, quality control, and robotics with computer programming.

(c) Knowledge and skills.

(1) The student uses mathematically based hydraulics concepts to measure and find pump output, understand pressure versus cylinder force, and understand flow rate versus 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.

(2) 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.

(3) The student understands the properties 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.

(4) 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, computer-aided manufacturing for lathe, and injection mold design. 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, analyze, and apply the proper cycle time and 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.

(5) 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 of an inductor in an alternating current circuit and give an application;

(E) show the effect of a capacitor in an alternating current circuit and give an application;

(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.

(6) 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) demonstrate how gage pressure and absolute pressure are different;

(C) consider and analyze Boyle's Law to explain its significance;

(D) convert air volumes at pressures to free air volumes;

(E) analyze 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) convert between units of head and pressure;

(I) explain the importance of total dynamic head in terms of suction and discharge head;

(J) demonstrate the measurement of the total head of a centrifugal pump;

(K) calculate friction head loss in a given pipe length using head loss tables and charts;

(L) calculate total suction lift, total suction head, total discharge head, and the total dynamic head of a system for a given flow rate;

(M) analyze and explain the importance of sensitivity in relation to pumps;

(N) use a data acquisition system to measure and mathematically analyze pressure drop characteristics in a pipe;

(O) analyze a flat plate orifice flow meter for operation and demonstrate an application;

(P) use a data acquisition system to measure and analyze mathematically data from a flat plate orifice flow meter;

(Q) calculate hydraulic power;



(R) explain the importance of brake horsepower and centrifugal pump efficiency;

(S) calculate centrifugal pump brake horsepower given pump efficiency and hydraulic power;

(T) calculate the effect of impeller diameter on the flow rate of a centrifugal pump and pump head;

(U) predict the effect of impeller diameter on a pump head capacity curve;

(V) calculate the effect of impeller speed on the flow rate of a centrifugal pump and pump head;

(W) calculate net positive suction head available and required result to explain its importance; and

(X) analyze the proper size of a centrifugal pump for a given application.

(7) The student applies mathematical principles of manufacturing processes in lathe operations and computer numerical control mill programming and calculates speeds and feeds for machining tools, including special cutting tools. The student is expected to:

(A) calculate the diameter of a tap drill given the thread specifications for a given application;

(B) analyze and set the point reference zero and the tool offsets in a computer numerical control mill;

(C) calculate spindle speeds for various machine tools; and

(D) calculate and select the proper feed rate for machine tool operations.

(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 formula;

(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) design and apply factors of safety to material engineering; 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 and contrast 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 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 a 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.

(11) The student applies mathematical principles of robotics and computer programming of robotic mechanisms in point-to-point assembly, calculating working envelope and computer system conversions. The student is expected to:

(A) create a pallet load configuration and program a robot to execute the operation;

(B) calculate the working envelope of a robotic arm; and

(C) convert between the hexadecimal, binary, and decimal number systems.

§130.368. Electronics (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Concepts of Engineering and Technology.

(b) Introduction. Students enrolled in this course 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 explore career opportunities, employer expectations, and educational needs in the electronics industry.

(c) Knowledge and skills.

(1) The student demonstrates the skills necessary for success in the workplace. The student is expected to:

(A) identify employment and career opportunities, including differences between an engineering technician, engineering technologist, and engineer;

(B) investigate and work toward industry certifications;

(C) demonstrate the principles of teamwork related to engineering and technology;

(D) identify and use appropriate work habits;

(E) identify governmental regulations for health and safety in the workplace related to electronics;

(F) discuss ethical issues related to electronics;

(G) demonstrate respect for diversity in the workplace;

(H) demonstrate appropriate actions and identify consequences relating to discrimination, harassment, and equality;

(I) demonstrate effective oral and written communication skills using a variety of software applications and media; and

(J) explore career preparation learning experiences, including, but not limited to, job shadowing, mentoring, and apprenticeship training.

(2) The student participates in team projects in various roles. The student is expected to:

(A) apply principles of effective teamwork;

(B) solve problems as part of a team;

(C) demonstrate proper attitudes as a team leader; and

(D) demonstrate proper attitudes as a team member.

(3) The student develops skills for managing a project. The student is expected to:

(A) use time-management techniques to develop and maintain work schedules and meet deadlines;

(B) 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) follow 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 regulations and industry standards;

(D) dispose of hazardous materials and wastes appropriately;

(E) perform maintenance on selected tools, equipment, and machines;

(F) handle and store tools and materials correctly; and

(G) describe the results of negligent or improper maintenance.

(5) 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, Kirchoff's laws, and power laws;

(B) demonstrate an understanding of magnetism and induction as they relate to electronic circuits;

(C) demonstrate knowledge of the fundamentals of electronics theory;

(D) perform electrical-electronic troubleshooting assignments; and

(E) develop knowledge of voltage regulation devices.

(6) 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 electronic theory to generators, electric motors, and transformers;

(C) design analog and digital circuits using common components; and

(D) demonstrate knowledge of common devices in optoelectronics.

(7) The student uses engineering design methodologies. The student is expected to:

(A) understand and discuss principles of ideation;

(B) think critically, identify the system constraints, and make fact-based decisions;

(C) use rational thinking to develop or improve a product;

(D) apply decision-making strategies when developing solutions;

(E) use an engineering notebook to record prototypes, corrections, and mistakes in the design process; and

(F) use an engineering notebook to record the final design, construction, and manipulation of finished projects.

(8) 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) safely use tools and laboratory equipment to construct and repair circuits;

(B) use precision measuring instruments to analyze circuits and prototypes;

(C) describe and perform measurements using oscilloscopes; and

(D) use multiple software applications to simulate circuit behavior and present concepts.

(9) The student designs products 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 product;

(C) improve a product design to meet a specified need;

(D) produce schematics to industry standards;

(E) describe potential patents and the patenting process;

(F) use a variety of technologies to design components;

and

(G) explore new technologies that may affect electronics.

(10) The student builds a 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.

§130.369. Advanced Electronics (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: Electronics.

(b) Introduction. Students enrolled in this course will demonstrate knowledge and applications of advanced circuits, electrical measurement, and electrical implementation used in the electronics and computer industries. Through use of the design process, students will transfer advanced academic skills to component designs in a project-based environment. Additionally, students explore career opportunities, employer expectations, and educational needs in the electronics industry.

(c) Knowledge and skills.

(1) The student demonstrates the technical skills necessary for success in the workplace. The student is expected to:

(A) identify employment and career opportunities, including differences between an engineering technician, engineering technologist, and engineer;

(B) investigate and prepare for industry certifications;

(C) demonstrate the principles of teamwork related to engineering and technology;

(D) identify and use appropriate work habits;

(E) demonstrate knowledge related to governmental regulations, including health and safety;

(F) discuss ethical issues related to engineering and technology and incorporate proper ethics in submitted projects;

(G) demonstrate respect for diversity in the workplace;

(H) demonstrate appropriate actions and identify consequences relating to discrimination, harassment, and equality;

(I) demonstrate effective oral and written communication skills using a variety of software applications and media; and

(J) explore career preparation learning experiences, including, but not limited to, job shadowing, mentoring, and apprenticeship training.

(2) The student participates in team projects in various roles. The student is expected to:

(A) understand and discuss how teams function;

(B) use teamwork to solve problems;

(C) serve as a team leader while demonstrating appropriate attitudes; and

(D) serve as a team member while demonstrating appropriate attitudes.

(3) The student develops skills for managing a project. The student is expected to:

(A) use time-management techniques to develop and maintain work schedules to meet specific project objectives;

(B) 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) follow safety guidelines as described in various manuals, instructions, and regulations;

(C) recognize the classification of hazardous materials and wastes;

(D) dispose of hazardous materials and wastes appropriately;

(E) perform maintenance on selected tools, equipment, and machines;

(F) handle and store tools and materials correctly; and

(G) describe the results of negligent or improper maintenance.

(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, Kirchoff'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 such as Thevenin and Norton's theorems;

(C) perform advanced electrical-electronic troubleshooting assignments;

(D) apply knowledge of voltage regulation devices;

(E) apply knowledge of the design and use of diodes, transistors, and analog components with integrated circuits;

(F) implement knowledge of solid-state components and devices such as a power supply design;

(G) demonstrate knowledge of the similarities and differences in optoelectronic devices;

(H) implement knowledge of transmission theory;

(I) implement knowledge of microprocessor applications;

(J) apply electronic theory to generators, electric motors, power supplies, electronic amplifiers, electronic oscillators, communication circuits, and systems; and

(K) complete advanced electrical-electronic troubleshooting assignments to industry standards.

(7) The student uses engineering design methodologies. The student is expected to:

(A) understand and discuss principles of ideation;

(B) think critically, identify the system constraints, and make fact-based decisions;

(C) use rational thinking 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 record prototypes, corrections, and mistakes in the design process; and

(H) use an engineering notebook to record the final design, construction, and manipulation of finished projects.

(8) 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) safely use tools and laboratory equipment to construct and repair circuits;

(B) use precision measuring instruments to analyze circuits and prototypes;

(C) describe and perform measurement techniques with analog, digital, and 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.

(9) 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.

(10) 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.

*§130.370. Robotics and Automation (One to Two Credits).*

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisites: Concepts of Engineering and Technology and Electronics.

(b) Introduction. Students enrolled in this course will demonstrate knowledge and skills necessary for the robotic and automation industry. Through implementation of the design process, students will transfer advanced academic skills to component designs in a project-based environment. Students will build prototypes or use simulation software to test their designs. Additionally, students explore career opportunities, employer expectations, and educational needs in the robotic and automation industry.

(c) Knowledge and skills.

(1) The student demonstrates the skills necessary for success in the workplace. The student is expected to:

(A) distinguish the differences between an engineering technician, engineering technologist, and engineer;

(B) identify employment and career opportunities;

(C) investigate and work toward industry certifications;

(D) demonstrate the principles of teamwork related to engineering and technology;

(E) identify and use appropriate work habits;

(F) demonstrate knowledge related to governmental regulations, including health and safety;

(G) discuss ethical issues related to engineering and technology and incorporate proper ethics in submitted projects;

(H) demonstrate respect for diversity in the workplace;

(I) demonstrate appropriate actions and identify consequences relating to discrimination, harassment, and equality;

(J) demonstrate effective oral and written communication skills using a variety of software applications and media; and

(K) explore career preparation learning experiences, including, but not limited to, job shadowing, mentoring, and apprenticeship training.

(2) The student participates in team projects in various roles. The student is expected to:

(A) understand and discuss how teams function;

(B) use teamwork to solve problems; and

(C) serve as a team leader and a team member and demonstrate appropriate attitudes while serving in those roles.

(3) The student develops skills for managing a project. The student is expected to:

(A) use time-management techniques to develop and maintain work schedules and meet deadlines;

(B) 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) follow 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 regulations;

(D) dispose of hazardous materials and wastes appropriately;

(E) perform maintenance on selected tools, equipment, and machines;

(F) handle and store tools and materials correctly; and

(G) 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) demonstrate knowledge of process control factors; and

(D) demonstrate knowledge of motors, gears, and gear trains used in the robotic or automated systems.

(6) The student develops an understanding of the advanced concepts of physics, robotics, and automation. The student is expected to:

(A) demonstrate knowledge of rotational dynamics, weight, friction, and traction factors required for the operation of robotic and automated systems;

(B) demonstrate knowledge of torque and power factors used in the operation of robotic systems;

(C) demonstrate knowledge of feedback control loops to provide information; and

(D) demonstrate knowledge of different types of sensors used in robotic or automated systems and their operations.

(7) The student develops an understanding of the characteristics and scope of manipulators 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) understand and discuss the relationship of torque, gear ratio, and weight of payload in a robotic or automated system operation; and

(C) demonstrate knowledge of end effectors and their use in linkages and the gearing of a robotic or automated system.

(8) The student uses engineering design methodologies. The student is expected to:

(A) understand and discuss principles of ideation;

(B) think critically, identify the system constraints, and make fact-based decisions;

(C) use rational thinking 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 record prototypes, corrections, and or mistakes in the design process; and

(H) use an engineering notebook to record the final design, construction, and manipulation of finished projects.

(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) safely use tools and laboratory equipment 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 designs products using appropriate design processes and techniques. The student is expected to:

(A) interpret industry standard system 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) understand use of sensors in a robotic or automated system;

(E) produce system schematics to industry standards;

(F) evaluate design solutions using conceptual, physical, and mathematical models at various times during the design process to check for proper functionality and to note areas where improvements are needed;

(G) 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

(H) describe potential patents and the patenting process.

(11) The student builds a 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;

(C) implement sensors in a robotic or automated system;

(D) construct a robotic or automated system to perform specified operations using the design process;

(E) test and evaluate the design in relation to pre-established requirements such as criteria and constraints and refine as needed;

(F) refine the design of a robotic or automated system to ensure quality, efficiency, and manufacturability of the final product; and

(G) present the prototype using a variety of media.

§130.371. Principles of Technology (One Science Credit).

(a) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: one unit of high school science and Algebra I. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum).

(b) Introduction.

(1) Principles of Technology. In Principles of Technology, students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Various systems will be described in terms of space, time, energy, and matter. Students will study a variety of topics that include laws of motion, conservation of energy, momentum, electricity, magnetism, thermodynamics, and characteristics and behavior of waves. Students will apply physics concepts and perform laboratory experimentations for at least 40% of instructional time using safe practices.

(2) 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.

(3) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation can be experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

(4) Science and social ethics. Scientific decision making is a way of answering questions about the natural world. Students should be able to distinguish between scientific decision-making methods and ethical and social decisions that involve the application of scientific information.

(5) Scientific systems. A system is a collection of cycles, structures, and processes that interact. All systems have basic properties that can be described in terms of 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. 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.

(c) Knowledge and skills.

(1) The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. These investigations must involve actively obtaining and analyzing data with physical equipment, but may also involve experimentation in a simulated environment as well as field observations that extend beyond the classroom. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations; and

(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.

(2) The student uses a systematic approach to answer scientific laboratory and field investigative questions. The student is expected to:

(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(2) of this section;

(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories;

(C) know that 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 may be subject to change as new areas of science and new technologies are developed;

(D) distinguish between scientific hypotheses and scientific theories;

(E) design and implement investigative procedures, including making observations, asking well-defined questions, formulating testable hypotheses, identifying variables, selecting appropriate equipment and technology, and evaluating numerical answers for reasonableness;

(F) demonstrate the use of course apparatus, equipment, techniques, and procedures, including multimeters (current, voltage, resistance), triple beam balances, batteries, clamps, dynamics demonstration equipment, collision apparatus, data acquisition probes, dis-

charge tubes with power supply (H, He, Ne, Ar), hand-held visual spectrometers, hot plates, slotted and hooked lab masses, bar magnets, horseshoe magnets, plane mirrors, convex lenses, pendulum support, power supply, ring clamps, ring stands, stopwatches, trajectory apparatus, tuning forks, carbon paper, graph paper, magnetic compasses, polarized film, prisms, protractors, resistors, friction blocks, mini lamps (bulbs) and sockets, electrostatics kits, 90-degree rod clamps, metric rulers, spring scales, knife blade switches, Celsius thermometers, meter sticks, scientific calculators, graphing technology, computers, cathode ray tubes with horseshoe magnets, ballistic carts or equivalent, resonance tubes, spools of nylon thread or string, containers of iron filings, rolls of white craft paper, copper wire, Periodic Table, electromagnetic spectrum charts, slinky springs, wave motion ropes, and laser pointers;

(G) use a wide variety of additional course apparatus, equipment, techniques, materials, and procedures as appropriate such as ripple tank with wave generator, wave motion rope, micrometer, caliper, radiation monitor, computer, ballistic pendulum, electroscopes, inclined plane, optics bench, optics kit, pulley with table clamp, resonance tube, ring stand screen, four-inch ring, stroboscope, graduated cylinders, and ticker timer;

(H) make measurements with accuracy and precision and record data using scientific notation and International System (SI) units;

(I) identify and quantify causes and effects of uncertainties in measured data;

(J) organize and evaluate data and make inferences from data, including the use of tables, charts, and graphs;

(K) communicate valid 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

(L) express and manipulate relationships among physical variables quantitatively, including the use of graphs, charts, and equations.

(3) The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials;

(C) draw inferences based on data related to promotional materials for products and services;

(D) explain the impacts of the scientific contributions of a variety of historical and contemporary scientists on scientific thought and society;

(E) research and describe the connections between physics and future careers; and

(F) express and interpret relationships symbolically in accordance with accepted theories to make predictions and solve problems mathematically, including problems requiring proportional reasoning and graphical vector addition.

(4) The student uses the scientific process to investigate physical concepts. The student is expected to:

(A) understand that scientific hypotheses are tentative and testable statements that must be capable of being supported by observational evidence;

(B) understand that scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers;

(C) design and implement investigative procedures;

(D) demonstrate the appropriate use and care of laboratory equipment;

(E) demonstrate accurate measurement techniques using precision instruments;

(F) record data using scientific notation and International System (SI) of units;

(G) identify and quantify causes and effects of uncertainties in measured data;

(H) organize and evaluate data, including the use of tables, charts, and graphs;

(I) communicate conclusions supported through various methods such as laboratory reports, labeled drawings, graphic organizers, journals, summaries, oral reports, or technology-based reports; and

(J) record, express, and manipulate data using graphs, charts, and equations.

(5) The student demonstrates appropriate safety techniques in the field and laboratory environments. The student is expected to:

(A) master relevant safety procedures;

(B) follow safety guidelines as described in various manuals, instructions, and regulations;

(C) identify and classify hazardous materials and wastes; and

(D) make prudent choices in the conservation and use of resources and the disposal of hazardous materials and wastes appropriately.

(6) The student uses critical-thinking, scientific-reasoning, and problem-solving skills. The student is expected to:

(A) analyze and evaluate scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing;

(B) communicate and apply scientific information;

(C) explain the societal impacts of scientific contributions; and

(D) research and describe the connections between technologies and future career opportunities.

(7) The student describes the nature of two-dimensional forces. The student is expected to:

(A) generate and interpret relevant equations using graphs and charts for one- and two-dimensional motion, including:

(i) using and describing one-dimensional equations for displacement, distance, speed, velocity, average velocity, acceleration, and average acceleration;

(ii) using and describing two-dimensional equations for projectile and circular motion; and

(iii) using and describing vector forces and resolution;

(B) describe and calculate the effects of forces on objects, including law of inertia and impulse and conservation of momentum;

(C) develop and interpret free-body force diagrams; and

(D) identify and describe motion relative to different frames of reference.

(8) The student describes the nature of forces in the physical world. The student is expected to:

(A) research and describe the historical development of the concepts of gravitational, electromagnetic, weak nuclear, and strong nuclear forces;

(B) describe the nature of gravitational forces among objects and their masses;

(C) describe the nature of electrical forces and fields with respect to the nature of their charges;

(D) describe the nature of magnetic forces and fields;

(E) describe the nature of electromagnetic forces and fields;

(F) characterize materials as conductors or insulators based on their electrical properties;

(G) describe and demonstrate electrical circuits;

(H) investigate and describe the relationship between electric and magnetic fields in applications such as generators, motors, and transformers; and

(I) describe technological applications of the strong and weak nuclear forces in nature.

(9) The student describes the concepts of the conservation of energy and momentum. The student is expected to:

(A) describe the transformational process between work, potential energy, and kinetic energy (work-energy theorem);

(B) use examples to analyze and calculate the relationships among work, kinetic energy, and potential energy;

(C) describe the concept of power; and

(D) describe the concepts of conservation of energy and conservation of momentum.

(10) The student analyzes the concept of thermal energy. The student is expected to:

(A) describe how the macroscopic properties of a thermodynamic system such as temperature, specific heat, and pressure are related to the molecular level of matter, including kinetic or potential energy of atoms;

(B) contrast and give examples of different processes of thermal energy transfer, including conduction, convection, and radiation; and

(C) analyze and explain technological examples such as solar and wind energy that illustrate the laws of thermodynamics, including the law of conservation of energy and the law of entropy.

(11) The student analyzes the properties of wave motion and optics. The student is expected to:

(A) examine and describe oscillatory motion and wave propagation in various types of media;

(B) investigate and analyze characteristics of waves, including velocity, frequency, amplitude, and wavelength;

(C) describe the relationship between wavespeed, frequency, and wavelength;

(D) compare and contrast the characteristics and behaviors of transverse and longitudinal waves;

(E) investigate behaviors of waves, including reflection, refraction, diffraction, interference, resonance, and the Doppler effect;

(F) describe and predict image formation as a consequence of reflection from a plane mirror and refraction through a thin convex lens; and

(G) describe the role of wave characteristics and behaviors in medical and industrial technology applications.

(12) The student analyzes the concepts of atomic, nuclear, and quantum phenomena. The student is expected to:

(A) describe the photoelectric effect and the dual nature of light;

(B) compare and explain emission spectra produced by various atoms;

(C) describe the significance of mass-energy equivalence;

(D) describe the role of mass-energy equivalence for areas such as nuclear stability, fission, and fusion; and

(E) explore technology applications of atomic, nuclear, and quantum phenomena such as nanotechnology, radiation therapy, diagnostic imaging, and nuclear power.

§130.372. Scientific Research and Design (One Science Credit).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisite: one unit of high school science. To receive credit in science, students must meet the 40% laboratory and fieldwork requirement identified in §74.3(b)(2)(C) of this title (relating to Description of a Required Secondary Curriculum).

(b) Introduction.

(1) 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.

(2) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world. Scientific methods of investigation are experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

(3) Science and social ethics. Scientific decision making is a way of answering questions about the natural world. 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).



(4) Scientific systems. A system is a collection of cycles, structures, and processes that interact. 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. 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.

(c) Knowledge and skills.

(1) The student, for at least 40% of instructional time, conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. These investigations must involve actively obtaining and analyzing data with physical equipment, but may also involve experimentation in a simulated environment as well as field observations that extend beyond the classroom. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations; and

(B) demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.

(2) The student uses a systematic approach to answer scientific laboratory and field investigative questions. The student is expected to:

(A) know the definition of science and understand that it has limitations, as specified in subsection (b)(1) of this section;

(B) know that scientific hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power which have been tested over a wide variety of conditions are incorporated into theories;

(C) know that 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 may be subject to change as new areas of science and new technologies are developed;

(D) distinguish between scientific hypotheses and scientific theories;

(E) design and implement investigative procedures, including making observations, asking well-defined questions, formulating testable hypotheses, identifying variables, selecting appropriate equipment and technology, and evaluating numerical answers for reasonableness;

(F) collect and organize qualitative and quantitative data and make measurements with accuracy and precision using 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, micropipettors, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, cameras, and meter sticks;

(G) analyze, evaluate, make inferences, and predict trends from data;

(H) identify and quantify causes and effects of uncertainties in measured data;

(I) organize and evaluate data and make inferences from data, including the use of tables, charts, and graphs; and

(J) communicate valid conclusions supported by the data through various methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

(3) The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions within and outside the classroom. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

(B) communicate and apply scientific information extracted from various sources such as current events, news reports, published journal articles, and marketing materials;

(C) draw inferences based on data related to promotional materials for products and services;

(D) explain the impacts of the scientific contributions of a variety of historical and contemporary scientists on scientific thought and society;

(E) research and describe the connections between science and future careers; and

(F) express and interpret relationships symbolically in accordance with accepted theories to make predictions and solve problems mathematically, including problems requiring proportional reasoning and graphical vector addition.

(4) The student formulates hypotheses to guide experimentation and data collection. The student is expected to:

(A) perform background research with respect to an investigative problem; and

(B) examine hypotheses generated to guide a research process by evaluating the merits and feasibility of the hypotheses.

(5) The student analyzes published research. 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 research design to determine the purpose for each of the procedures performed; and

(D) compare the relationship of the hypothesis to the conclusion.

(6) The student develops and implements investigative designs. The student is expected to:

(A) interact and collaborate with scientific researchers and/or other members of the scientific community to complete a research project;

(B) identify and manipulate relevant variables within research situations;

(C) use a control in an experimental process; and

(D) design procedures to test hypotheses.

(7) The student collects, organizes, and evaluates qualitative and quantitative data obtained through experimentation. The student is expected to:

(A) record observations and events as they occur within an investigation;

(B) acquire, manipulate, and analyze data using equipment and technology;

(C) construct data tables to organize information collected in an experiment; and

(D) evaluate data using statistical methods to recognize patterns, trends, and proportional relationships.

(8) The student knows how to synthesize valid conclusions from qualitative and quantitative data. The student is expected to:

(A) synthesize conclusions supported by research data;

(B) consider and communicate alternative explanations for observations and results; and

(C) identify limitations within the research process and provide recommendations for additional research.

(9) The student communicates conclusions clearly and concisely to an audience of professionals. The student is expected to:

(A) construct charts, tables, and graphs in facilitating data analysis and in communicating experimental results clearly and effectively using technology; and

(B) suggest alternative explanations from observations or trends evident within the data or from prompts provided by a review panel.

§130.373. Engineering Design and Problem Solving (One Science Credit).

(a) General requirements. This course is recommended for students in Grades 11-12. Prerequisites: Geometry, Algebra II, Chemistry, and Physics.

(b) Introduction.

(1) Engineering design is the creative process of solving problems by identifying needs and then devising solutions. This solution may be a product, technique, structure, process, or many other things depending on the problem. Science aims to understand the natural world, while engineering seeks to shape this world to meet human needs and wants. Engineering design takes into consideration limiting factors or "design under constraint." Various engineering disciplines address a broad spectrum of design problems using specific concepts from the sciences and mathematics to derive a solution. The design process and problem solving are inherent to all engineering disciplines.

(2) Engineering Design and Problem Solving reinforces and integrates skills learned in previous mathematics and science courses. This course emphasizes solving problems, moving from well defined toward more open ended, with real-world application. Students apply critical-thinking skills to justify a solution from multiple design options. Additionally, the course promotes interest in and understanding of career opportunities in engineering.

(3) This course is intended to stimulate students' ingenuity, intellectual talents, and practical skills in devising solutions to engineering design problems. Students use the engineering design process cycle to investigate, design, plan, create, and evaluate solutions. At the same time, this course fosters awareness of the social and ethical implications of technological development.

(c) Knowledge and skills.

(1) The student, for at least 40% of instructional time, conducts engineering field and laboratory activities using safe, environmentally appropriate, and ethical practices. The student is expected to:

(A) demonstrate safe practices during engineering field and laboratory activities; and

(B) make informed choices in the use and conservation of resources, recycling of materials, and the safe and legal disposal of materials.

(2) The student applies knowledge of science and mathematics and the tools of technology to solve engineering design problems. The student is expected to:

(A) apply scientific processes and concepts outlined in the Texas Essential Knowledge and Skills (TEKS) for Biology, Chemistry, or Physics relevant to engineering design problems;

(B) apply concepts, procedures, and functions outlined in the TEKS for Algebra I, Geometry, and Algebra II relevant to engineering design problems;

(C) select appropriate mathematical models to develop solutions to engineering design problems;

(D) integrate advanced mathematics and science skills as necessary to develop solutions to engineering design problems;

(E) judge the reasonableness of mathematical models and solutions;

(F) investigate and apply relevant chemical, mechanical, biological, electrical, and physical properties of materials to engineering design problems;

(G) identify the inputs, processes, outputs, control, and feedback associated with open and closed systems;

(H) describe the difference between open-loop and closed-loop control systems;

(I) make measurements and specify tolerances with minimum necessary accuracy and precision;

(J) use appropriate measurement systems, including customary and International System (SI) of units; and

(K) use conversions between measurement systems to solve real-world problems.

(3) The student communicates through written documents, presentations, and graphic representations using the tools and techniques of professional engineers. The student is expected to:

(A) communicate visually by sketching and creating technical drawings using established engineering graphic tools, techniques, and standards;

(B) read and comprehend technical documents, including specifications and procedures;

(C) prepare written documents such as memorandums, emails, design proposals, procedural directions, letters, and technical reports using the formatting and terminology conventions of technical documentation;

(D) organize information for visual display and analysis using appropriate formats for various audiences, including, but not limited to, graphs and tables;

(E) evaluate the quality and relevance of sources and cite appropriately; and

(F) defend a design solution in a presentation.

(4) The student recognizes the history, development, and practices of the engineering professions. The student is expected to:

(A) identify and describe career options, working conditions, earnings, and educational requirements of various engineering disciplines such as those listed by the Texas Board of Professional Engineers;

(B) recognize that engineers are guided by established codes emphasizing high ethical standards;

(C) explore the differences, similarities, and interactions among engineers, scientists, and mathematicians;

(D) describe how technology has evolved in the field of engineering and consider how it will continue to be a useful tool in solving engineering problems;

(E) discuss the history and importance of engineering innovation on the United States economy and quality of life; and

(F) describe the importance of patents and the protection of intellectual property rights.

(5) The student creates justifiable solutions to open-ended 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 associated with an engineering problem such as materials, personnel, resources, funding, manufacturability, feasibility, and time;

(D) establish and evaluate constraints pertaining to a problem, including, but not limited to, health, safety, social, environmental, ethical, political, regulatory, and legal;

(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 methods such as models, prototypes, mock-ups, simulations, critical design review, statistical analysis, or experiments;

(G) apply structured techniques to select and justify a preferred solution to a problem such as a decision tree, design matrix, or cost-benefit analysis;

(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.

(6) The student manages an engineering design project. The student is expected to:

(A) participate in the design and implementation of a real or simulated engineering project;

(B) develop a plan and timeline for completion of a project;

(C) work in teams and share responsibilities, acknowledging, encouraging, and valuing contributions of all team members;

(D) compare and contrast the roles of a team leader and other team responsibilities;

(E) identify and manage the resources needed to complete a project;

(F) use a budget to determine effective strategies to meet cost constraints;

(G) create a risk assessment for an engineering design project;

(H) analyze and critique the results of an engineering design project; and

(I) maintain an engineering notebook that chronicles work such as ideas, concepts, inventions, sketches, and experiments.

§130.374. Practicum in Science, Technology, Engineering, and Mathematics (Two to Three Credits).

(a) 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 science, technology, engineering, and mathematics career cluster.

(b) Introduction. The practicum 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.

(c) 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, including 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 dress, grooming, and personal protective equipment as appropriate; and

(G) comply with practicum setting safety 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 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.

(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 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 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 shared 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 and 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 science, technology, engineering, and mathematics 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 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, active participation in career and technical student organizations and professional organizations;

(v) abstract of key points of the practicum;

(vi) resumé;

(vii) samples of work; and

(viii) valuation from the practicum supervisor; and

(B) present the portfolio to all interested stakeholders such as in a poster presentation.

§130.375. *Advanced Mathematical Decision Making (One Credit).*

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Algebra II.

(b) Introduction.

(1) Students continue to build upon their Kindergarten-Grade 8, algebra, and geometry foundations and expand their understanding through further mathematical experiences. The primary focal points of Advanced Mathematical Decision Making include the analysis of information using statistical methods and probability, modeling change and mathematical relationships, mathematical decision making in finance and society, and spatial and geometric modeling for decision making. In Advanced Mathematical Decision Making, students will learn to become critical consumers of the quantitative data that surround them every day, knowledgeable decision makers who use logical reasoning, and mathematical thinkers who can use their quantitative skills to solve problems related to a wide range of situations.

(2) As students do mathematics, they continually rely on mathematical processes, including problem-solving techniques, appropriate mathematical language and communication skills, connections within and outside mathematics, and reasoning. Students also use multiple representations, technology, applications and modeling, and numerical fluency in problem-solving contexts.

(c) Knowledge and skills.

(1) The student analyzes numerical data related to societal issues using a variety of quantitative measures. The student is expected to:

(A) apply, compare, and contrast ratios, rates, and ratings such as aspect ratios, growth rates, television program ratings, National Football League quarterback ratings, and job ratings to make informed decisions;

(B) apply, compare, and contrast averages, weighted averages, and indices such as grade point average, body mass index, and Consumer Price Index to make informed decisions;

(C) solve problems involving large quantities such as estimating crowd size, counting the number of available phone numbers, estimating animal populations, and managing natural resources; and

(D) apply algorithms to determine the check digit for identification numbers such as Universal Product Codes, Vehicle Identification Numbers, and credit card numbers and identify errors in recording and transmitting these numbers.

(2) The student analyzes and evaluates risk and return in the context of social decisions. The student is expected to:

(A) determine conditional probabilities and probabilities of compound events by constructing and analyzing representations, including tree diagrams, Venn diagrams, and area models, to make decisions in problem situations;

(B) use probabilities to make and justify decisions about risks in everyday life such as investing in the stock market, taking medication, or selecting car insurance; and

(C) calculate expected value to analyze fairness, pay-off, and risk.

(3) The student makes decisions based on understanding, analysis, and critique of reported statistical information and statistical summaries. The student is expected to:

(A) identify limitations or lack of information in studies reporting statistical information, especially when studies are reported in condensed form;

(B) interpret and compare the results of a poll or polls given a margin of error;

(C) identify uses and misuses of statistical analyses in studies reporting statistics or using statistics to justify particular conclusions, including assertions of cause and effect rather than correlation; and

(D) describe strengths and weaknesses of sampling techniques, data and graphical displays, and interpretations of summary statistics and other results appearing in a study, including reports published in the media.

(4) The student applies statistical methods to design and conduct a study that addresses one or more particular questions. The student is expected to:

(A) determine the need for and purpose of a statistical investigation and what type of statistical analysis can be used to answer a specific question or set of questions;

(B) identify the population of interest; select an appropriate sampling technique such as simple random, stratified, or systematic sampling; and collect data;

(C) identify the variables to be used in a study;

(D) determine possible sources of bias in a study and how such bias may impact the ability to generalize the results;

(E) create data displays for a given data set or data sets to investigate, compare, and estimate center, shape, spread, and unusual features; and

(F) determine possible sources of variability of data, including sampling, measurement, and induced and natural variability.

(5) The student communicates the results of reported and student-generated statistical studies. The student is expected to:

(A) report results of statistical studies to a particular audience, including selecting an appropriate presentation format, creating graphical data displays, and interpreting results in terms of the question studied;

(B) justify the design and the conclusion or conclusions of statistical studies, including the methods used for each; and

(C) communicate statistical results in both oral and written formats using appropriate statistical and non-technical language.

(6) The student models data, makes predictions, and judges the validity of a prediction. The student is expected to:

(A) determine whether there is a linear relationship in a set of bivariate data by finding the correlation coefficient for the data and interpret the coefficient as a measure of the strength and direction of the linear relationship; and

(B) collect or use numerical bivariate data to create a scatterplot and select a function such as linear, exponential, logistic, or trigonometric to construct a model using the data, justify the selection, and use the model to make predictions.

(7) The student uses mathematical models to represent, analyze, and solve problems involving change. The student is expected to:

(A) determine or analyze an appropriate growth or decay model, including linear, exponential, and logistic functions, to solve problems such as those involving inflation, medication dosage, climate change, or bone decay;

(B) determine or analyze an appropriate cyclical model, including trigonometric and other periodic functions, to solve problems such as those involving phases of the moon, ocean tides, musical tones, or sound;

(C) determine or analyze an appropriate piecewise model to solve problems such as those involving United States tax brackets, cab fare, and postal/shipping rates; and

(D) solve problems such as those involving pattern identification, population growth and decline, and compound interest using recursion or iteration.

(8) The student uses a variety of tools and methods to represent and solve problems involving static and dynamic situations. The student is expected to:

(A) create and use two- and three-dimensional representations of authentic situations using paper techniques or dynamic geometric environments for computer-aided design and other applications;

(B) solve problems and represent situations using vectors in areas such as transportation, computer graphics, and the physics of forces and motion;

(C) solve problems and represent geometric transformations using matrices in fields such as computer animations; and

(D) solve geometric problems involving inaccessible distances such as those encountered when building a bridge, constructing a skyscraper, or mapping planetary distances using basic trigonometric principles.

(9) The student uses a variety of network models represented graphically to organize data in quantitative situations, make informed decisions, and solve problems. The student is expected to:

(A) solve problems involving situations such as scheduling tasks, making deliveries, and finding shortest routes that can be represented by a vertex-edge graph and find critical paths, Euler paths, or minimal spanning trees; and

(B) construct, analyze, and interpret flow charts in order to develop an algorithm to describe a particular process such as designing quality-control procedures for a manufacturing facility.

(10) The student creates and analyzes mathematical models to make decisions related to earning, investing, spending, and borrowing money. The student is expected to:

(A) determine, represent, and analyze mathematical models for various types of income such as commission, salary, and hourly wage to determine the best option for a given situation;

(B) determine, represent, and analyze mathematical models for expenditures such as credit cards, auto financing, cell

phone plans, and financial aid to determine the best option for a given situation; and

(C) determine, represent, and analyze mathematical models and appropriate representations such as expected values or probability distributions for various types of loans and investments such as savings plans and real estate to determine the best loan or investment plan for a given situation.

(11) The student analyzes and evaluates the fairness of social decisions using mathematical techniques. The student is expected to:

(A) use mathematical methods to analyze fairness in situations such as division of property, proportional representation in government, the Electoral College, and the allocation of resources;

(B) apply various ranking algorithms such as methods used to compute class rank or athletic team rankings to determine an appropriate method for a given situation; and

(C) evaluate various selection processes such as approval voting, majority rule, weighted voting, sequential voting, or pair-wise voting to determine an appropriate method for a given situation.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

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Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

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For further information, please call: (512) 475-1497



## SUBCHAPTER P. TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

### 19 TAC §§130.391 - 130.404

The State Board of Education (SBOE) proposes new §§130.391-130.404, concerning the Texas essential knowledge and skills (TEKS) for transportation, distribution, and logistics. The proposal would revise career and technical education (CTE) TEKS based on recommendations of the CTE review panel, in accordance with the Texas Education Code (TEC), §28.0022, and would include an implementation date of the 2010-2011 school year.

The 80th Texas Legislature, 2007, passed House Bill (HB) 3485, adding the TEC, §28.0022, requiring the Texas Education Agency (TEA) to establish a panel to review and recommend revisions to the CTE curriculum. HB 3485 requires the panel to make recommendations to the SBOE not later than November 1, 2008, as necessary to increase the academic rigor of the CTE curriculum under the TEC, §28.002(a)(2)(F), and to improve and increase participation in the program under which high schools and articulated postsecondary institutions allow high school students to take advanced technical credit courses. HB 3485 further requires the SBOE to revise the CTE TEKS based on the recommendations of the panel no later than September 1, 2009. Districts are required to use the revised TEKS beginning with the 2010-2011 school year.

The CTE review panel presented recommendations to the SBOE at the November 2008 meeting. The SBOE asked the CTE review panel to present prioritized recommendations at a future meeting. The review panel presented prioritized recommendations at the March 2009 meeting.

In April, June, August, and October 2008 and January and April 2009, writing teams were convened to review all CTE TEKS and make recommendations for revisions. Recommendations include proposed CTE courses for which students could earn a fourth mathematics or science credit. After the November 2008 meeting, the SBOE received draft recommendations for proposed new CTE TEKS. A discussion item regarding proposed new 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, was presented to the SBOE Committee of the Full Board during the March 2009 meeting.

The proposed revisions were modified subsequent to presentation for discussion at the March 2009 SBOE committee meeting. Modifications reflected work of the writing team meeting conducted in April 2009.

The SBOE Committee of the Full Board held a public hearing on 19 TAC Chapter 130, Texas Essential Knowledge and Skills for Career and Technical Education, on May 20, 2009. At the May 22, 2009, meeting, the SBOE amended and approved the proposed revisions for first reading and filing authorization.

The proposal would have no procedural and reporting implications. Also, the proposal would have no locally maintained paperwork requirements.

Anita Givens, associate commissioner for standards and programs, has determined that for the first five-year period the new sections are in effect there will be fiscal implications for state and local government as a result of enforcing or administering the new sections.

There will be normal business costs associated with this process for the TEA, including staff and writing team travel, meeting accommodations, and production and dissemination of documents. In addition, a need for the development and implementation of professional development to help teachers and administrators understand the revised CTE TEKS is anticipated. It is not possible to determine the exact fiscal implication until input is received from districts regarding potential needs.

There are anticipated fiscal implications for school districts to implement the revised TEKS, which may include the need for professional development and revisions to district-developed databases, curriculum, and scope and sequence documents. Since curriculum and instruction decisions are made at the local district level, it is difficult to estimate the fiscal impact on any given district.

Ms. Givens has determined that for each year of the first five years the new sections are in effect the public benefit anticipated as a result of enforcing the rule actions would include better alignment of the TEKS and coordination of the standards with the adoption of instructional materials. In addition, the academic rigor of the CTE TEKS will be increased. There is no anticipated economic cost to persons who are required to comply with the proposed new sections.

The TEA has determined that there is no direct adverse economic impact for small businesses or microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Comments on the proposal may be submitted to Cristina De La Fuente-Valadez, Policy Coordination Division, Texas Education Agency, 1701 North Congress Avenue, Austin, Texas 78701, (512) 475-1497. Comments may also be submitted electronically to [rules@tea.state.tx.us](mailto:rules@tea.state.tx.us) or faxed to (512) 463-0028. In conjunction with the regularly scheduled July 2009 State Board of Education meeting, a public hearing on the proposal will be held on Wednesday, July 15, 2009, in Room 1-104, William B. Travis Building, 1701 North Congress Avenue, Austin, Texas.

The new sections are proposed under the Texas Education Code, §7.102(c)(4), which authorizes the SBOE to establish curriculum and graduation requirements; §28.002, which authorizes the SBOE to by rule identify the essential knowledge and skills of each subject of the required curriculum that all students should be able to demonstrate and that will be used in evaluating textbooks; §28.0022, which authorizes the SBOE to by rule revise the essential knowledge and skills of the career and technical education curriculum as provided by Section 28.002(c) based on the recommendations of the panel under Subsection (d); and §28.025, which authorizes the SBOE to by rule determine curriculum requirements for the minimum, recommended, and advanced high school programs that are consistent with the required curriculum under §28.002.

The new sections implement the Texas Education Code, §§7.102(c)(4), 28.002, 28.0022, and 28.025.

§130.391. Implementation of Texas Essential Knowledge and Skills for Transportation, Distribution, and Logistics.

The provisions of this subchapter shall be implemented by school districts beginning with the 2010-2011 school year.

§130.392. Principles of Transportation, Distribution, and Logistics (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) Introduction. In Principles of Transportation, Distribution, and Logistics, students 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 the transportation, 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.

(c) Knowledge and skills.

(1) The student explores the employability characteristics for success. The student is expected to:

(A) identify career development and entrepreneurship opportunities in transportation, distribution, and logistics such as how to search for and obtain employment, the qualifications that are required for varying career fields, and how to advance in a position;

(B) identify careers in transportation, distribution, and logistics systems;

(C) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in transportation, distribution, and logistics;

(D) discuss certification opportunities;

(E) demonstrate knowledge of personal and occupational health and safety;

(F) discuss response plans to emergency situations;

(G) identify employers' expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and

(H) explore career goals, objectives, and strategies as part of a plan for future career opportunities.

(2) The student develops leadership experience as it relates to transportation, 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.

(3) 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.

(4) The student understands the historical, current, and future significance of the transportation, distribution, and logistic industries. The student is expected to:

(A) define terms associated with the transportation, distribution, and logistics industries;

(B) identify the scope and effect upon society of the transportation, distribution, and logistics industries;

(C) identify significant historical and current developments in the transportation, distribution, and logistics industries;

(D) identify potential future scenarios for the transportation, distribution, and logistics industry systems;

(E) describe how emerging technologies and globalization impact the transportation, distribution, and logistics industries; and

(F) compare and contrast issues affecting the transportation, distribution, and logistics industries such as international trade, employment, safety, and environmental issues.

(5) The student analyzes the structure of transportation, 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.

(6) The student explains the transportation, 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 transportation, distribution, and logistics;

(C) review regulations and major laws to evaluate their impact on transportation, distribution, and logistics;

(D) read appropriate written material to stay abreast of current issues impacting transportation, 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 transportation, distribution, and logistics; and

(G) evaluate performance and contract compliance of contractors and service providers.

(7) 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) read and comprehend materials common to the transportation industry;

(G) employ writing and preparation skills using technical information; and

(H) demonstrate speaking skills.

(8) The student applies appropriate research methods for transportation, 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 transportation, distribution, and logistics industries;

(C) use a variety of resources for research and development; and

(D) describe the scientific methods of research.

(9) 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 transportation, 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.

(10) The student uses information technology tools specific to transportation, 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) demonstrate 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 transportation, distribution, and logistics systems.

(11) 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 transportation, distribution, and logistics environments;

(C) demonstrate first aid and cardiopulmonary resuscitation procedures; and

(D) demonstrate proper use of safety equipment.

(12) 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.

§130.393. Energy, Power, and Transportation Systems (One-Half to One Credit).

(a) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Transportation, Distribution, and Logistics.

(b) Introduction. The businesses and industries of the Transportation, Distribution, and Logistics cluster are rapidly expanding to provide new career opportunities. Students will need to understand the interaction between various vehicle systems, the logistics used to move goods and services to consumers, and the components of transportation infrastructure. Performance requirements will include academic



and technical skills. Students prepared to meet the expectations of employers in this industry must be able to interact and relate to others and understand the technologies used in order to provide products and services in a timely manner. The increasing demand for employees will provide growth potential.

(c) Knowledge and skills.

(1) The student knows the employability characteristics that lead to success. The student is expected to:

(A) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(B) identify employers' expectations and appropriate work habits;

(C) identify career development and entrepreneurship opportunities in the energy, power, and transportation systems, including how to search for and obtain employment and what qualifications are required for varying career fields;

(D) identify employment opportunities, including entrepreneurship, and certification requirements for the field of energy, power, and transportation systems;

(E) discuss certification opportunities to meet state academic standards and qualifications for employment in selected fields of study;

(F) apply ethical reasoning to a variety of workplace scenarios in order to make ethical decisions;

(G) apply competencies related to resources, information, systems, and technology;

(H) identify opportunities for leadership development and personal growth;

(I) describe team dynamics; and

(J) demonstrate effective oral and written communication skills with individuals from varied cultures.

(2) The student knows the functions and applications of the tools, equipment, technologies, and materials used in energy, power, and 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.

(3) 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 vehicle systems; and

(C) discuss preventative maintenance plans and systems to keep vehicular systems in operation.

(4) The student describes the historical, current, and future significance of the energy, power, and transportation systems. The student is expected to:

(A) identify the scope and effect upon society of the energy, power, and transportation systems; and

(B) identify potential future scenarios for the energy, power, and transportation systems.

(5) The student uses academic skills to document the requirements of energy, power, and transportation systems. The student is expected to:

(A) demonstrate communication skills in relation to 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 to diagnose component shape and alignment, based on industry specifications, and determine necessary repair;

(E) use critical-thinking skills and structured problem-solving 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, power, and transportation systems.

§130.394. Aircraft Technology (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. This course is designed to teach the theory of operation of aircraft airframes, power plants, and avionics systems and associated maintenance and repair practices. Aircraft services include knowledge of the function, diagnosis, and service of the electrical, electronic, hydraulic, pneumatic, airframe, mechanical, and power plant components of aircraft.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and certification requirements for the field of aircraft services;

(B) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(C) identify employers' expectations and appropriate work habits;

(D) discuss the competencies related to resources, information, systems, and technology;

(E) demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations; and

(F) apply reasoning skills to a variety of workplace situations in order to make ethical decisions.

(2) The student relates academic skills to the requirements of aircraft services. The student is expected to:

(A) demonstrate effective oral and written communication skills with individuals from varied cultures such as fellow workers, management, and customers;

(B) complete work orders and related paperwork;

(C) estimate parts and labor costs on aircraft repair orders;

(D) locate, read, and interpret documents such as schematics, charts, graphs, drawings, blueprints, service-repair manuals and service bulletins, airworthiness directives, and federal aviation regulations;

(E) perform precision measurements to diagnose component wear, compare to published specifications, and determine necessary repair; and

(F) employ critical-thinking skills and structured problem-solving skills to diagnose aircraft system malfunctions, solve problems, and make decisions.

(3) The student knows the technical knowledge and skills of aircraft services. The student is expected to:

(A) demonstrate knowledge of aviation regulations that govern the construction, maintenance, and service of aircraft;

(B) demonstrate knowledge of aircraft navigation and electronic communication systems;

(C) demonstrate knowledge of airframe construction and repair methods and techniques;

(D) demonstrate knowledge of aircraft assembly and rigging procedures;

(E) demonstrate knowledge of the service and maintenance of aircraft engines, systems, and components;

(F) demonstrate knowledge of aircraft common terminology, standard practices, and the proper use of tools required to complete maintenance, modifications, and repairs;

(G) discuss the completion of logbooks and computer applications to maintain required aircraft documents; and

(H) demonstrate knowledge of wiring diagrams.

(4) The student knows the function and application of the tools, equipment, technologies, and materials used in aircraft services. The student is expected to:

(A) identify and select materials and processes used in aircraft maintenance;

(B) safely use hand and power tools and equipment commonly employed in the maintenance and repair of aircraft;

(C) discuss the proper handling and disposal of environmentally hazardous materials used in servicing aircraft;

(D) perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations; and

(E) demonstrate knowledge of new and emerging aircraft technologies.

(5) The student applies the technical knowledge and skills of the trade to simulated and actual work situations. The student is expected to:

(A) accurately calculate aircraft weight and balance;

(B) predict flight time and fuel consumption;

(C) predict wind vector, drift, headings, and speed from meteorological information;

(D) perform required aircraft airframe, instrument, and engine inspections;

(E) demonstrate knowledge of aircraft hydraulic and landing gear systems and components;

(F) apply the essential knowledge and skills in aircraft services to work-based learning experiences such as cooperative education, job shadowing, mentoring, and apprenticeship training; and

(G) discuss preventative maintenance plans and systems to keep aircraft systems in operation.

(6) The student demonstrates appropriate personal and communication skills. The student is expected to:

(A) describe and apply ethical and legal responsibilities appropriate to the workplace;

(B) demonstrate the uses of proper etiquette and behavior;

(C) identify benefits of personal appearance and health habits;

(D) practice written and oral communication skills; and

(E) employ effective listening skills.

(7) The student learns the value of and how to develop an improved occupational experience program as it relates to the aircraft industry. The student is expected to:

(A) apply proper record-keeping skills as related to industry-based occupational experiences;

(B) participate in youth leadership opportunities to create a well-rounded occupational experience;

(C) produce a program of activities for a career and technical student organization or other leadership opportunities; and

(D) develop a work plan and budget.

§130.395. *Advanced Aircraft Technology (Two to Three Credits).*

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Aircraft Technology.

(b) Introduction. This course is designed to apply the theory of operation, repair, and maintenance of aircraft airframe, power plant, and avionics systems. Aircraft services include knowledge of the function, diagnosis, and service of the electrical, electronic, hydraulic, pneumatic, airframe, mechanical, and power plant components of aircraft as governed by federal aviation regulations.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) discuss employment opportunities, including entrepreneurship, and certification requirements for the field of aircraft services;

(B) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(C) evaluate employers' expectations and appropriate work habits;

(D) apply the competencies related to resources, information systems, and technology;

(E) demonstrate knowledge of the technology and skills related to health and safety in the workplace, as specified by appropriate government regulations; and

(F) apply reasoning to a variety of workplace situations in order to make ethical decisions.

(2) The student relates academic skills to the requirements of aircraft services. 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) access work orders and related paperwork;

(C) estimate parts and labor costs on aircraft repair orders;

(D) locate, read, and interpret documents such as schematics, charts, graphs, drawings, blueprints, service-repair manuals and service bulletins, airworthiness directives, and federal aviation regulations;

(E) perform precision measurements to diagnose component wear, compare to published specifications, and determine correct replacement parts; and

(F) employ critical-thinking skills and structured problem-solving skills to diagnose aircraft system malfunctions, solve problems, and make decisions.

(3) The student knows the technical knowledge and skills of aircraft services. The student is expected to:

(A) research aviation regulations that govern the construction, maintenance, and service of aircraft;

(B) diagnose and repair aircraft navigation and electronic communication systems;

(C) demonstrate airframe construction and repair methods and techniques;

(D) demonstrate aircraft assembly and rigging procedures; and

(E) demonstrate service and maintenance of aircraft engines, systems, and components.

(4) The student knows the function and application of the tools, equipment, technologies, and materials used in aircraft services. The student is expected to:

(A) identify and select basic materials and processes used in aircraft maintenance;

(B) safely use hand and power tools and equipment commonly employed in the maintenance and repair of aircraft;

(C) discuss the proper handling and disposal of environmentally hazardous materials used in maintaining and servicing aircraft; and

(D) demonstrate the application of new and emerging aircraft technologies.

(5) The student applies the technical knowledge and skills of the trade to simulated and actual work situations. The student is expected to:

(A) accurately calculate aircraft weight and balance;

(B) predict flight time and fuel consumption;

(C) predict wind vector, drift, headings, and speed from meteorological information;

(D) perform required aircraft airframe, instrument, and engine inspections;

(E) service and repair aircraft hydraulic and landing gear systems and components;

(F) apply the essential knowledge and skills in aircraft services to learning experiences such as job shadowing, mentoring, apprenticeship training, and career preparation;

(G) develop preventative maintenance plans and systems to keep aircraft systems in operation; and

(H) perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations.

§130.396. Automotive Technology (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. Automotive services include knowledge of the function of the major automotive systems and the principles of diagnosing and servicing these systems. In Automotive Technology, students gain knowledge and skills in the repair, maintenance, and diagnosis 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 the theory of operation of automotive vehicle systems and associated repair practices.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and certification requirements for the field of automotive services;

(B) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(C) identify employers' expectations and appropriate work habits;

(D) apply the competencies related to resources, information, systems, and technology;

(E) demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations; and

(F) discuss ethics in a variety of workplace scenarios.

(2) The student relates academic skills to the requirements of automotive services. The student is expected to demonstrate effective oral and written communication skills with individuals from varied cultures such as fellow workers, management, and customers.

(3) The student knows the technical knowledge and skills that form the knowledge of automotive services. The student is expected to:

(A) describe the function of the major components of powered vehicles such as engines, fuel, lubrication, cooling, electrical, and air conditioning systems;

(B) describe the function of the automotive chassis components such as braking, steering, transmission, drivetrain, and suspension systems;

(C) locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins;

(D) perform precision measurements to diagnose component wear, compare to published specifications, and determine necessary repair; and

(E) discuss alternative fuel vehicles.

(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) 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) demonstrate knowledge of new and emerging automotive technologies; and

(D) identify diagnostic tools and equipment.

(5) The student applies the technical knowledge and skills of the trade-to-work situations. The student is expected to:

(A) order, stock, and locate parts;

(B) remove, repair, and replace engine components;

(C) service and repair braking, steering, and suspension systems;

(D) service and repair electrical and electronic systems;

(E) service and repair air-conditioning, heating, and accessory systems;

(F) inspect, service, and repair chassis and power train components and systems;

(G) service and repair cooling and lubrication systems; and

(H) perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations.

§130.397. *Advanced Automotive Technology (Two to Three Credits).*

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Automotive Technology.

(b) Introduction. Automotive services include advanced knowledge of the function of the major automotive systems and the principles of diagnosing and servicing these systems. In Advanced Automotive Technology, students gain knowledge and skills in the repair, maintenance, and diagnosis 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 the theory of operation of automotive vehicle systems and associated repair practices.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and certification requirements for the field of automotive service;

(B) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(C) identify employers' expectations and appropriate work habits;

(D) apply the competencies related to resources, information, systems, and technology;

(E) demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations;

(F) discuss ethics in a variety of workplace situations;

(G) prepare a resumé; and

(H) demonstrate job interview skills.

(2) The student relates core academic skills to the requirements of automotive service. The student is expected to:

(A) complete repair orders and related paperwork; and

(B) estimate parts and labor costs on repair orders.

(3) The student knows the technical knowledge and skills that form the core of knowledge of automotive service. The student is expected to:

(A) diagnose and repair the major components of powered vehicles;

(B) diagnose and repair automotive chassis and drive-line components;

(C) locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins;

(D) perform precision measurements to diagnose component wear, compare to published specifications, and determine necessary repair;

(E) employ critical-thinking skills and structured problem-solving skills to diagnose vehicle malfunctions, solve problems, and make decisions; and

(F) discuss alternative fuel vehicles.

(4) The student knows the functions and applications of the tools, equipment, technologies, and materials used in automotive service. The student is expected to:

(A) 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) discuss new and emerging automotive technologies; and

(D) demonstrate proper use of diagnostic tools and equipment.

(5) The student applies the technical knowledge and skills of the trade to simulated or actual work situations. The student is expected to:

(A) perform regular audits and inspections;

(B) discuss ordering, stocking, and locating parts;

(C) analyze malfunctions and remove, repair, and replace engine components;

(D) diagnose, service, and repair braking, steering, and suspension systems;

(E) test, diagnose, service, and repair automotive electrical and electronic systems;

(F) diagnose, service, and repair air-conditioning, heating, and accessory systems;

(G) diagnose, service, and repair chassis and power train components and systems;

(H) test, diagnose, service, and repair air, fuel, ignition, emissions, and drive systems; and

(I) test, diagnose, service, and repair cooling and lubrication systems.

§130.398. Collision Repair and Refinishing (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. Collision repair and refinishing services include knowledge of the processes, technologies, and materials used in the reconstruction and alteration of vehicles. This course is designed to teach the concepts and theory of systems related to automotive collision repair and refinishing.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and certification requirements for the fields of collision repair and refinishing;

(B) demonstrate the principles of group participation and leadership related to citizenship and career preparation;

(C) identify employers' expectations and appropriate work habits;

(D) review the competencies related to resources, information, systems, and technology;

(E) demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate regulations; and

(F) apply reasoning skills to a variety of workplace situations in order to make ethical decisions.

(2) The student relates core academic skills to the requirements of collision repair and refinishing services. The student is expected to:

(A) demonstrate effective oral and written communication skills with individuals from varied cultures such as fellow workers, management, and customers;

(B) complete collision repair and refinishing orders and related paperwork;

(C) locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins; and

(D) demonstrate mathematical competencies required to use and interpret service repair manuals.

(3) The student knows the technical knowledge and skills that form the core knowledge of collision repair and refinishing services. The student is expected to:

(A) demonstrate the types of repair procedures for the different types of vehicle body constructions;

(B) demonstrate the proper preparation, application, and refinishing of various paint products;

(C) estimate parts and labor costs on collision repair and refinishing orders; and

(D) perform precision measurements to diagnose component shape and alignment.

(4) The student knows the function and application of tools, equipment, technologies, and materials used in collision repair and refinishing services. The student is expected to:

(A) use hand and power tools and equipment commonly employed in collision repair and refinishing safely to industry standards;

(B) identify proper welding and cutting techniques and processes;

(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 and refinishing technologies.

(5) 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;

(F) identify types of vehicle finishes and associated re-finish techniques;

(G) identify vehicle occupant restraint systems and associated repair methods;

(H) identify vehicle body components and repair or replace considerations;

(I) demonstrate the welding and cutting processes used in vehicle collision repair;

(J) remove, install, and adjust vehicle mechanical and electrical components;

(K) identify and determine the cause of paint and refinishing defects;

(L) discuss interior and exterior trim repair;

(M) discuss corrosion protection; and

(N) demonstrate vehicle detailing.

§130.399. Advanced Collision Repair and Refinishing (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Collision Repair and Refinishing.

(b) Introduction. Collision repair and refinishing services include advanced knowledge of the processes, technologies, and materials used in the reconstruction and alteration of vehicles. This course is

designed to teach the application of advanced technical skills and practices related to collision repair and refinishing.

(c) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify employment opportunities, including entrepreneurship, and certification requirements for the field of collision repair and refinishing technologies;

(B) examine the principles of group participation and leadership related to citizenship and career preparation;

(C) evaluate employers' expectations and appropriate work habits;

(D) apply the competencies related to resources, information, systems, and technology;

(E) demonstrate advanced knowledge of the technical knowledge and skills related to health and safety in the workplace, as specified by appropriate government regulations;

(F) apply reasoning skills to a variety of workplace situations in order to make ethical decisions;

(G) prepare a resumé; and

(H) demonstrate job interview skills.

(2) The student relates academic skills to the requirements of collision repair and refinishing services. The student is expected to:

(A) demonstrate effective oral and written communication skills with individuals from varied cultures such as fellow workers, management, and customers;

(B) evaluate completed collision repair and refinishing orders and related paperwork; and

(C) locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins.

(3) The student knows advanced technical knowledge and skills that form the core knowledge of collision repair and refinishing services. The student is expected to:

(A) demonstrate the types of repair procedures for the different types of vehicle body constructions;

(B) access the proper preparation, application, and refinishing of paint products, decals, and adhesives;

(C) defend the estimated parts and labor costs on collision repair and refinishing technology orders; and

(D) perform precision measurements to diagnose component shape and alignment, compare to published specifications, and determine necessary repair.

(4) The student knows the function and application of tools, equipment, technologies, and materials used in collision repair and refinishing services. The student is expected to:

(A) use hand and power tools and equipment commonly employed in collision repair and refinishing technologies according to industry safety standards;

(B) demonstrate proper welding and cutting techniques and processes;

(C) properly handle and dispose of environmentally hazardous materials used in collision repair and refinishing technologies; and

(D) discuss new and emerging collision repair and refinishing technologies.

(5) The student applies the advanced technical knowledge and skills to simulated and actual work situations in collision repair and refinishing. The student is expected to:

(A) analyze audits and inspections to maintain compliance with safety, health, and environmental regulations;

(B) inspect, straighten, and align vehicle frames and replace damaged body units;

(C) inspect and repair damaged sheet metal panels, fiberglass, and synthetic body parts;

(D) inspect, repair, and adjust vehicle body parts;

(E) remove and install vehicle glass and accompanying mechanical and automated parts;

(F) determine body panel damage and demonstrate the associated repair methods;

(G) determine vehicle structural damage and demonstrate the associated repair methods;

(H) determine the type of vehicle finish and demonstrate the associated preparation and refinish techniques;

(I) determine the type of vehicle finish and demonstrate paint selection, mixing, matching, and application;

(J) demonstrate paint application finishing and final detailing;

(K) apply recognized welding and cutting processes used in vehicle collision repair;

(L) identify the cause of paint and refinishing defects;

(M) demonstrate interior and exterior trim repair;

(N) demonstrate corrosion protection methods; and

(O) demonstrate vehicle detailing.

§130.400. Small Engine Technology (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. This course is designed to provide training for entry-level employment in the small engine technology industry. Engine Technology includes knowledge of the function, diagnosis, and service of the systems and components of all types of small engines such as lawn mowers, motorcycle, and irrigation engines. 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.

(c) Knowledge and skills.

(1) The student explores the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the small engine technology industry, including how to search for and obtain employment, what qualifications are required for varying career fields, and how to advance in a position;

(B) identify careers in the small engine technology industry;

(C) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in the small engine technology industry;

(D) demonstrate knowledge of personal and occupational safety, health, and first-aid policies in the workplace;

(E) identify employers' expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and

(F) explore career objectives and strategies to develop a plan for future career and educational goals.

(2) The student learns the value of and how to develop an improved occupational experience program as it relates to the small engine technology industry. The student is expected to:

(A) apply proper record-keeping skills as related to industry-based occupational experiences;

(B) participate in youth leadership opportunities to create a well-rounded occupational experience;

(C) produce a program of activities for a career and technical student organization or other leadership opportunities; and

(D) develop a work plan and budget.

(3) The student identifies concepts related to geographic diversity. The student is expected to identify significant similarities and differences in the small engine technology industry.

(4) The student describes the historical, current, and future significance of the small engine technology industry. The student is expected to:

(A) define terms associated with the small engine technology industry;

(B) identify the scope and effect of the small engine technology industry on society;

(C) identify significant historical and current developments in the small engine technology industry;

(D) identify potential future scenarios for the small engine technology industry;

(E) identify reasons for world trade and globalization; and

(F) review regulations and major laws to evaluate their impact on the small engine technology industry.

(5) The student demonstrates appropriate personal and communication skills. The student is expected to:

(A) describe and apply ethical and legal responsibilities in the workplace;

(B) demonstrate the uses of proper etiquette and behavior;

(C) identify benefits of personal appearance and health habits;

(D) practice written and oral communication skills and employ effective listening skills; and

(E) comprehend reading materials common to the transportation industry.

(6) 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) explain Geographic Information Systems and Global Positioning Systems applications; and

(E) use other computer-based equipment in small engine technology.

(7) The student implements strategies to reduce sources of workplace hazards common in industry in order to promote a safe and accident-free working environment. The student is expected to:

(A) identify, assess, and control hazards to maintain safe 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 to maintain compliance with regulations;

(E) identify rules and laws designed to promote safety and health in the workplace;

(F) demonstrate knowledge of first aid and cardiopulmonary resuscitation procedures and proper use of safety equipment; and

(G) determine causes of safety system failures.

(8) The student demonstrates the technical knowledge and skills for small engine technology. The student is expected to:

(A) identify the use and application of small engines and components;

(B) identify the basic components of electrical-electronic systems;

(C) demonstrate knowledge of small engine designs, components, and applications;

(D) identify and safely use small engine measuring tools;

(E) safely use tools used in the operation, maintenance, and repair of two- and four-cycle engines;

(F) discuss the characteristics of two- and four-cycle engines;

(G) identify the major engine components and their functions;

(H) read and interpret documents such as engine schematics, charts, and service-repair manuals and bulletins;

(I) discuss the proper handling and disposal of environmentally hazardous materials used in small engine technology;

(J) demonstrate knowledge of new and emerging small engine technologies;

(K) complete repair orders and related paperwork; and

(L) discuss measuring and test equipment.

§130.401. Advanced Small Engine Technology (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. Recommended prerequisite: Small Engine Technology.

(b) Introduction. Advanced 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 lawn mowers, motorcycles, and irrigation engines. This course is designed to provide advanced 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 and small engine overhauls. In addition, the student will receive instruction in safety, academic, and leadership skills as well as career opportunities.

(c) Knowledge and skills.

(1) The student explores the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify career development and entrepreneurship opportunities in the small engine technology industry, including how to search for and obtain employment, what qualifications are required for varying career fields, and how to advance in a position;

(B) identify careers in the small engine technology industry;

(C) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in the small engine technology industry;

(D) discuss certification opportunities;

(E) demonstrate skills and knowledge of personal and occupational health and safety in the workplace;

(F) discuss response plans to emergency situations;

(G) identify employers' expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills;

(H) develop personal goals, objectives, and strategies as part of a plan for future career and educational opportunities;

(I) prepare a resumé; and

(J) demonstrate job interview skills.

(2) The student develops an occupational experience program as it relates to the small engine technology industry. The student is expected to:

(A) plan, propose, conduct, and evaluate industry-based occupational experiences; and

(B) use a customized record-keeping system for the individual industry-based occupational experiences.

(3) The student describes the historical, current, and future significance of the small engine technology industry. The student is expected to:

(A) describe how emerging technologies and globalization impacts the small engine technology industry;

(B) compare and contrast issues affecting the small engine technology industry such as employment, safety, and environmental issues; and

(C) describe marketing factors and practices that impact other cultures.

(4) The student analyzes the structure of the small engine technology industry 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;

(E) describe the development of organizational vision, mission, and goals through the strategic planning process;

(F) develop a local program of activities for a career and technical student organization; and

(G) develop a report that summarizes key information about the performance and use of resources within a career and technical student organization.

(5) The student explains the small engine technology industry at local, state, national, and international levels. The student is expected to:

(A) identify reasons for world trade and globalization;

(B) review regulations and major laws to evaluate their impact on the small engine technology industry;

(C) read appropriate written material to stay abreast of current issues impacting the small engine technology industry;

(D) use critical-thinking skills to identify and organize alternatives and evaluate public-policy issues related to the small engine technology industry;

(E) evaluate performance and contract compliance of contractors and service providers;

(F) develop and manage preventative maintenance plans and systems to keep facility, tools, and equipment operating safety and properly;

(G) assess preventive maintenance plans to meet facility, tool, and equipment design and manufacturer requirements;

(H) successfully complete repair orders and paperwork related to the small engine technology industry;

(I) estimate parts and labor costs on repair orders for small engine repair;

(J) read and interpret documents such as small engine schematics, charts, and service-repair manuals and bulletins; and

(K) demonstrate knowledge of new and emerging technologies that may affect the service and repair of small engines.

(6) The student demonstrates appropriate personal and communication skills. The student is expected to:

(A) describe and apply ethical and legal responsibilities for appropriate workplace conduct;

(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 transportation industry;

(F) employ technical writing and preparation skills; and

(G) demonstrate effective speaking skills through prepared and extemporaneous oral presentations.

(7) The student applies appropriate research methods on small engine technology topics. The student is expected to:

(A) define major fields of research and development;

(B) identify and apply scientific methods of research in the small engine technology industry;

(C) use a variety of resources for research and development;

(D) describe the scientific method of research;

(E) evaluate scientific constructs such as conclusions, conflicting data, controls, data, inferences, limitations, questions, sources of errors, and variables; and

(F) apply scientific methods through direct and indirect observation.

(8) 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, charts, and plots;

(D) analyze and interpret data from graphs, tables, charts, and plots;

(E) maintain appropriate financial records such as management journals, inventories, income and expense logs, and financial statements and balance sheets;

(F) conduct formative, summative, and financial analyses on project learning objectives and records;

(G) derive engine calculations such as 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;

(H) derive and measure electrical calculations such as electrical resistance, current, and voltage in engines;

(I) apply Ohm's law and power theory to small engines;

(J) apply electronic theory to generators, electric motors, power supplies, electronic amplifiers, electronic oscillators, and circuits found in engines;

(K) explain Newton's Law as it relates to engines; and

(L) calculate Bernoulli's principle and Venturi effect as it relates to small engines.

(9) 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 applications, Internet applications, 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.

(10) The student knows advanced technical knowledge and skills of small engine technology. The student is expected to:

(A) identify the use and application of small engines and components;

(B) identify the components of electrical-electronic systems;

(C) demonstrate knowledge 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.

(11) The student applies advanced technical knowledge and skills in simulated or actual work situations. The student is expected to:

(A) troubleshoot and repair small engines;

(B) perform preventive 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) demonstrate the ability to maintain and service engine systems such as lubrication, belts, cooling, crankcase breathers, filters, starters, ignition, electronics, points, valves, and other systems;

(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;

(H) collect measurements using precision instruments;

(I) evaluate small engine parts for wear tolerances;

(J) explain the relationship between an electric current and magnetic fields using starters, generators, or electromagnets;

(K) analyze the effects of heating and cooling on small engines;

(L) explain the thermophysical properties of fluid systems commonly used in small engines;

(M) analyze electric circuits and electronic systems in small engines;

- (N) define, analyze, and explain the laws of thermodynamics;
- (O) evaluate heat energy transfer in small engines;
- (P) calculate speed, momentum, acceleration, work, and power in small engines; and
- (Q) compare and contrast efficiency of various engine sizes and types.

§130.402. Transportation Systems Management (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 9-12.

(b) Introduction. In Transportation Systems Management, students gain knowledge and skills in material handling and distribution and proper application, design, and production of technology as it relates to the transportation, distribution, and logistics industries. This course includes the safe operation of tractor-trailers, fork lifts, and related heavy equipment. The course allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings.

(c) Knowledge and skills.

(1) The student demonstrates an understanding of the transportation system. The student is expected to:

(A) explain the history and development of the United States transportation systems such as railroads, highways, airports, water systems, and the use of intermodal vans;

(B) examine logistic 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 risk mitigation, policy change issues, security issues, and cultural factors;

(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 Department of Transportation, Environmental Protection Agency, and Occupational Safety and Health Administration hazardous materials regulation knowledge and skills. The student is expected to:

(A) discuss the Department of Transportation, including procedures or policies, material designations, packaging requirements, and operational rules;

(B) explain 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 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, 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 controls of a tractor-trailer such as shifting, backing, docking, coupling and uncoupling, adjusting vehicle speed, and conducting 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 safety standards for forklifts, including equipment operation, battery maintenance, liquid propane tanks, 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 start-up, shut-down, and proper 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, 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) examine 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 safely transporting heavy equipment; and

(E) discuss equipment theft prevention procedures.

§130.403. Logistics, Planning, and Management Systems (One to Two Credits).

(a) General requirements. This course is recommended for students in Grades 10-12.

(b) Introduction. This course is designed to provide training for entry-level employment in the Logistics, Planning, and Management Systems. This course focuses on the business planning and management aspects of transportation, distribution, and logistics. To prepare for success, students will learn, reinforce, experience, apply, and transfer their knowledge and skills and technologies in a variety of settings.

(c) Knowledge and skills.

(1) The student explores the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) identify career development and entrepreneurship opportunities in logistics, planning, and management systems, including how to search for and obtain employment, what qualifications are required for varying career fields, and how to advance in a position;

(B) identify careers in logistics, planning, and management;

(C) apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in logistics, planning, and management;

(D) prepare for certifications required to meet state academic standards and qualify for selected fields of study;

(E) demonstrate knowledge of personal and occupational safety, health, and first-aid policy in the workplace;

(F) develop response plans to emergency situations;

(G) identify employers' expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and

(H) develop personal career goals, objectives, and strategies as part of a plan for future career and educational opportunities.

(2) The student develops an occupational experience program as it relates to logistics, planning, and management systems. The student is expected to:

(A) plan, propose, conduct, and evaluate occupational experiences;

(B) apply proper record-keeping skills as they relate to occupational experiences;

(C) design and use a customized record-keeping system for the individual occupational experiences;

(D) participate in youth leadership opportunities to create a well-rounded occupational experience; and

(E) develop a work plan and budget.

(3) The student identifies concepts related to cultural diversity. The student is expected to:

(A) identify significant similarities and differences in international cultures;

(B) explain the variety of world markets; and

(C) describe marketing factors and practices that impact other cultures.

(4) The student describes the historical, current, and future significance of the logistics, planning, and management industries. The student is expected to:

(A) define terms associated with the logistics, planning, and management industries;

(B) identify the scope of the logistics, planning, and management industries and their effect on society;

(C) identify significant historical and current logistics, planning, and management industries;

(D) identify potential future scenarios for the logistics, planning, and management industry systems;

(E) describe how emerging technologies and globalization impacts the logistics, planning, and management industries; and

(F) compare and contrast issues affecting the logistics, planning, and management industries such as international trade, employment, safety, and environmental issues.

(5) The student analyzes the structure of logistics, planning, and management 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.

(6) The student explains the logistics, planning, and management 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 logistics, planning, and management;

(C) review regulations and major laws to evaluate their impact on the industry;

(D) read appropriate written material to stay abreast of current issues;

(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; and

(G) evaluate performance and contract compliance of contractors and service providers.

(7) 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 logistics, planning, and management industries;

(F) employ sound writing and preparation skills for prepared and extemporaneous oral presentations as well as presentation of technical information; and

(G) demonstrate speaking skills.

(8) The student applies appropriate research methods for logistics, planning, and management systems 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.

(9) 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; and

(F) conduct formative and summative reflective and financial analyses on project learning objectives and records in order to problem-solve for the future.

(10) 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 or explain the benefits of Geographic Information Systems and Global Positioning Systems hardware and applications; and

(E) use computer-based equipment to manage resources.

(11) 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 working environment. The student is expected to:

(A) identify, assess, implement, and control hazards to maintain safe and healthful 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.

(12) 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 handling information, warnings, display requirements, and required documentation;

(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 standardized industry protocols and procedures; and

(J) examine equipment and staffing requirements and develop traffic management plans and work schedules.

(13) 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 risk mitigation, policy change issues, security issues, and cultural changes;

(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.

§130.404. Practicum in Transportation, Distribution, and Logistics (Two to Three Credits).

(a) General requirements. This course is recommended for students in Grades 11-12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of courses in the Transportation, Distribution, and Logistics cluster.

(b) Introduction. The Practicum 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.

(c) 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, including 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 dress, grooming, and personal protective equipment as appropriate; and

(G) comply with practicum setting safety 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 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.

(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 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 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 shared 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, Distribution, and Logistics cluster. 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:

(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) resumé;

(v) samples of work; and

(vi) evaluation from the practicum supervisor; and

(B) present the portfolio to all interested stakeholders such as in a poster presentation.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902129

Cristina De La Fuente-Valadez

Director, Policy Coordination

Texas Education Agency

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 475-1497



## TITLE 22. EXAMINING BOARDS

### PART 9. TEXAS MEDICAL BOARD

#### CHAPTER 185. PHYSICIAN ASSISTANTS

##### 22 TAC §§185.4, 185.6, 185.13, 185.16, 185.19, 185.23, 185.26

The Texas Medical Board (Board) proposes amendments to Chapter 185, §§185.4, 185.6, 185.13, 185.16, 185.19, 185.23, and 185.26, concerning Physician Assistants.

The amendment to §185.4, relating to Procedural Rules for Licensure Applicants, deletes expired language that grandfathered licensure applicants who applied before 2008 from having to comply with certain examination requirements, explains that applicants for relicensure who have already taken the jurisprudence exam (JP) are not required to retake the exam, and makes presentation of state licensure verification a discretionary requirement rather than mandatory for each applicant.

The amendment to §185.6, relating to Annual Renewal of License, allows physician assistants to obtain six hours of continuing medical education (CME) per year by serving as an expert panel reviewer for the Board and deletes language relating to a 30-day grace period after expiration of license to conform with §204.156, Texas Occupations Code.

The amendment to §185.13, relating to Notification of Intent to Practice and Supervise, provides that if a primary supervising physician of a physician assistant is not able to supervise for more than 30 days, then a new primary supervising physician must provide supervision.

The amendment to §185.16, relating to Employment Guidelines, clarifies at what academic institutions a physician may supervise a physician assistant for the purpose of providing medical services in preventive medicine, disease management, health and wellness education or similar services.

The amendment to §185.19, relating to Employment Guidelines, references §§187.75 - 185.82 of this title for the purpose of imposing administrative penalties on physician assistants for certain violations of the Physician Assistants (PA) Act.

The amendment to §185.23, relating to Third Party Reports to the Board, corrects rule citations in the Professional Liability Claims Report.

The amendment to §185.26, relating to Voluntary Surrender of Physician Assistant License, updates the language to correctly reflect the title of Chapter 196 of Title 22 of the Texas Administrative Code.

Elsewhere in this issue of the *Texas Register*, the Board contemporaneously proposes the rule review for Chapter 185.

Nancy Leshikar, Interim General Counsel for the Board, has determined that for each year of the first five years the sections as proposed are in effect the public benefit anticipated as a result of enforcing §185.4 will be to ease some of the requirements for licensure applicants without lowering the standards to become a physician assistant. The public benefit anticipated as a result of enforcing §185.6 will be to encourage physician assistants in good standing with the Board to serve as expert panel reviewers on standard of care cases. The public benefit anticipated as a result of enforcing §185.13 will be to ensure that physician assistants are adequately supervised by a physician. The public benefit anticipated as a result of enforcing §185.16 will be to clarify the rule regarding applicability. The public benefit anticipated as a result of enforcing §185.19 will be to clarify when administrative penalties may be assessed for violations of the PA Act. The public benefit anticipated as a result of enforcing §185.23 will be to provide accurate rules for licensees to follow. The public benefit anticipated as a result of enforcing §185.26 will be to have accurate rules for licensees to follow.

Ms. Leshikar has also determined that for the first five-year period the sections are in effect there will be no fiscal implication to state or local government as a result of enforcing the sections as proposed. There will be no effect to individuals required to comply with the rules as proposed. There will be no effect on small or micro businesses.

Comments on the proposals may be submitted to Sally Durocher, P.O. Box 2018, Austin, Texas 78768-2018, or e-mail comments to: rules.development@tmb.state.tx.us. A public hearing will be held at a later date.

The amendments are proposed under the authority of the Texas Occupations Code Annotated, §204.101, which provides authority for the Board to adopt rules and bylaws as necessary to: govern its own proceedings; perform its duties; regulate the practice of physician assistants in this state; enforce this subtitle; and establish rules related to licensure.

No other statutes, articles or codes are affected by this proposal.

§185.4. *Procedural Rules for Licensure Applicants.*

(a) Except as otherwise provided in this section, an individual shall be licensed by the board before the individual may function as a physician assistant. A license shall be granted to an applicant who:

(1) - (9) (No change.)

(10) ~~must pass [for applicants who apply for a license on or after January 1, 2007, passes]~~ the national licensing examination required for NCCPA certification within no more than six attempts; and[-]

(11) ~~must pass the [for applicants who apply for a license on or after September 1, 2007, passes a]~~ jurisprudence examination ("JP exam"), which shall be conducted on the licensing requirements and other laws, rules, or regulations applicable to the physician assistant profession in this state. The jurisprudence examination shall be developed and administered as follows:

(A) The staff of the Medical Board shall prepare questions for the JP exam and provide a facility by which applicants can take the examination.

(B) Applicants must pass the JP exam with a score of 75 or better within three attempts.

(C) An examinee shall not be permitted to bring medical books, compends, notes, medical journals, calculators or other help into the examination room, nor be allowed to communicate by word or sign with another examinee while the examination is in progress without permission of the presiding examiner, nor be allowed to leave the examination room except when so permitted by the presiding examiner.

(D) Irregularities during an examination such as giving or obtaining unauthorized information or aid as evidenced by observation or subsequent statistical analysis of answer sheets, shall be sufficient cause to terminate an applicant's participation in an examination, invalidate the applicant's examination results, or take other appropriate action.

(E) An applicant who is unable to pass the JP exam within three attempts must appear before a committee of the board to address the applicant's inability to pass the examination and to re-evaluate the applicant's eligibility for licensure. It is at the discretion of the committee to allow an applicant additional attempts to take the JP exam.

(F) A person who has passed the JP Exam shall not be required to retake the Exam for relicensure, except as a specific requirement of the board as part of an agreed order.

(b) The following documentation shall be submitted as a part of the licensure process:

(1) - (3) (No change.)

(4) Verification from other states. On request of board staff, an applicant must have any state, in which he or she has ever been licensed as any type of healthcare provider regardless of the current status of the license, submit to the board a letter verifying the status of the license and a description of any sanctions or pending disciplinary matters. The information must be sent directly from the state licensing entities. [Each applicant for licensure who is licensed, registered, or certified in another state must have that state submit directly to the board, on a form provided by the board, that the physician assistant's license, registration, or certification is current and in full force and that the license, registration, or certification has not been restricted, canceled, suspended, or revoked. The other state shall also include a description of any sanctions imposed by or disciplinary matters pending in the state.]

~~[(5) State License Registration. Each applicant, if licensed, registered, or certified in another state as a physician assistant, must submit a copy of the license registration certificate to the board. The license, registration, or certificate number and the date of expiration must be visible on the copy.]~~

(5) ~~[(6)]~~ Arrest Records. If an applicant has ever been arrested, a copy of the arrest and arrest disposition needs to be requested from the arresting authority and that authority must submit copies directly to the board.

(6) ~~[(7)]~~ Malpractice. If an applicant has ever been named in a malpractice claim filed with any liability carrier or if an applicant has ever been named in a malpractice suit, the applicant must:

(A) have each liability carrier complete a form furnished by this board regarding each claim filed against the applicant's insurance;

(B) for each claim that becomes a malpractice suit, have the attorney representing the applicant in each suit submit a letter directly to the board explaining the allegation, dates of the allegation, and current status of the suit. If the suit has been closed, the attorney must state the disposition of the suit, and if any money was paid, the amount of the settlement. The letter shall be accompanied by supporting documentation including court records if applicable. If such letter is not available, the applicant will be required to furnish a notarized affidavit explaining why this letter cannot be provided; and

(C) provide a statement, composed by the applicant, explaining the circumstances pertaining to patient care in defense of the allegations.

(7) ~~[(8)]~~ Additional Documentation. Additional documentation as is deemed necessary to facilitate the investigation of any application for licensure must be submitted.

(c) - (e) (No change.)

§185.6. *Annual Renewal of License.*

(a) (No change.)

(b) The following documentation shall be submitted as part of the renewal process:

(1) Continuing Medical Education. As a prerequisite to the annual registration of a physician assistant's license, 40 hours of continuing medical education (CME) are required to be completed in the following categories:

(A) at least one-half of the hours are to be from formal courses that are designated for Category I credit by a CME sponsor approved by the American Academy of Physician Assistants.

(B) The remaining hours may be from Category II composed of informal self-study, attendance at hospital lectures, grand rounds, case conferences, or by providing volunteer medical services at a site serving a medically underserved population, other than at a site that is the primary practice site of the license holder, and shall be recorded in a manner that can be easily transmitted to the board upon request.

(C) A physician assistant shall receive one credit of continuing medical education for each hour of time spent up to 6 hours per year, as required by subparagraph (A) of this paragraph based on participation in a program sponsored by the board and approved for CME credit for the evaluation of a physician assistant's competency or practice monitoring.

(2) - (8) (No change.)

(c) - (h) (No change.)

(i) Expired Annual Registration Permits.

(1) If a physician assistant's registration permit has been expired for less than one year, the physician assistant may obtain a new permit by submitting to the board a completed permit application, the

registration fee, as defined in §175.2(2) of this title (relating to Registration and Renewal Fees) and the penalty fee, as defined in §175.3(2) of this title (relating to Penalties). [If a physician assistant's registration permit has expired, the physician assistant may register for a new permit without monetary penalty during the first 30 days following expiration. If a physician assistant's permit has been expired for longer than 30 days, but less than 91, the physician may obtain a new permit by submitting to the board a completed permit application, the registration fee, and the penalty fee, as defined in §175.3(2) of this title.]

(2) If a physician assistant's registration permit has been expired for longer than 90 days but less than one year, the physician assistant may obtain a new permit by submitting a completed permit application, the registration fee, and a penalty fee as defined in §175.3(2) of this title.]

(2) [(3)] If a physician assistant's registration permit has been expired for one year or longer, the physician assistant's license is automatically canceled, unless an investigation is pending, and the physician assistant may not obtain a new permit.

(3) A person whose license has expired may not engage in activities that require a license until the licensed has been renewed.

[(4)] Practicing as a physician assistant after a physician assistant's permit has expired [the expiration of the 30-day grace period] under subsection (a) of this section without obtaining a new registration permit for the current registration period has the same effect as, and is subject to all penalties of, practicing as a physician assistant without a license. The Board interprets §204.156 of the Act to provide the exclusive sanction that may be imposed by the board for practicing medicine after the expiration of the permit.

#### §185.13. Notification of Intent to Practice and Supervise.

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

(d) If a supervising physician will be unavailable to supervise the physician assistant as required by this section, arrangements shall be made for an alternate physician to provide that supervision. The alternate physician providing that supervision shall affirm in writing and document through a log where the physician assistant is located, that he or she is familiar with the protocols or standing delegation orders in use, and is accountable for adequately supervising care provided pursuant to those protocols or standing delegation orders. The log shall be kept with the protocols or standing orders. The log shall contain dates of the alternate physician supervision and be signed by the alternate physician acknowledging this responsibility. The physician assistant is responsible for verifying that the alternate physician is a licensed Texas physician holding an unrestricted and active license. Alternate physicians may not collectively provide supervision for more than a 30-day period. If the primary supervising physician cannot return to supervising the physician assistant after 30 days, a new primary supervising physician must provide supervision.

#### §185.16. Employment Guidelines.

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

(d) A physician who provides medical services in preventive medicine, disease management, health and wellness education, or similar services in an accredited academic/teaching institution listed in paragraphs (1) - (3) [(4)] of this subsection, or its affiliates, may be denoted as the supervising physician for more than five physician assistants in that institution or its affiliates, provided the supervising physician determines that the physician assistants are properly trained to deliver the services, that the services are of such a nature that they may be safely and competently delivered by the supervised physician assistants, and the proper paperwork has been filed with the Medical Board.

The supervision of physician assistants must comply with all institutional rules and there must be accurate and timely internal institutional records, which are available upon request within 24 hours to the Medical Board, which list the name and license number of the physician who is specifically assigned to actively supervise each physician assistant at one of the following institutions:

(1) a school of medicine in this state accredited by the Liaison Committee on Medical Education or the American Osteopathic Association of Professional Education;

(2) the University of Texas Health Science Center at Tyler;

or

(3) the University of Texas M.D. Anderson Cancer Center.

[(4) University of Texas Medical Branch at Galveston;]

[(2) University of Texas Southwestern Medical Center at Dallas;]

[(3) University of Texas Health Science Center at Houston;]

[(4) University of Texas Health Science Center at San Antonio;]

[(5) University of Texas Health Center at Tyler;]

[(6) University of Texas M.D. Anderson Cancer Center;]

[(7) Texas A&M University College of Medicine;]

[(8) Texas Tech University School of Medicine;]

[(9) Baylor College of Medicine; or]

[(10) University of North Texas Health Science Center at Fort Worth.]

(e) - (f) (No change.)

#### §185.19. Administrative Penalties.

(a) Pursuant to §204.351 of the Act, the board by order may impose an administrative penalty, in accordance with §§187.75 - 187.82 of this title (relating to the Imposition of Administrative Penalty), against a person licensed or regulated under the Act who violates the Act or a rule or order adopted under the Act. The imposition of such a penalty shall be consistent with the requirements of the Act. [The board by order may impose an administrative penalty, subject to the provisions of the APA, against a person licensed or regulated under the Act who violates the Act or a rule or order adopted under the Act.]

(b) - (c) (No change.)

#### §185.23. Third Party Reports to the Board.

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

(d) Reporting Professional Liability Claims.

(1) - (8) (No change.)

(9) Reporting Form. The reporting form shall be as follows:

Figure: 22 TAC §185.23(d)(9)

(10) (No change.)

(e) (No change.)

#### §185.26. Voluntary Relinquishment or Surrender of Physician Assistant License.

Pursuant to §204.315 of the Act, the Board may accept the voluntary relinquishment or surrender of a physician assistant license. Chapter



196 of this title (relating to Voluntary Relinquishment or Surrender of a Medical License [~~Voluntary Surrender of a Medical License~~]) shall govern the voluntary relinquishment or surrender of a physician assistant license in a similar manner as that chapter applies to a medical license. Section 185.4 of this title (relating to Procedural Rules for Licensure Applicants) shall govern reapplication after a voluntary relinquishment or surrender.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902078

Mari Robinson, J.D.

Interim Executive Director

Texas Medical Board

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-7016



## PART 15. TEXAS STATE BOARD OF PHARMACY

### CHAPTER 291. PHARMACIES

#### SUBCHAPTER A. ALL CLASSES OF PHARMACIES

##### 22 TAC §291.6

The Texas State Board of Pharmacy proposes amendments to §291.6 concerning Pharmacy License Fees. The amendments to §291.6, if adopted, will raise pharmacy license fees based on increased expense.

Gay Dodson, R.Ph., Executive Director/Secretary, has determined that, for the first five-year period the amendments are in effect, there will be fiscal implications for state government as a result of enforcing or administering the proposal as follows:

##### Revenue Increase

FY2010 = \$300,298

FY2011 = \$332,840

FY2012 = \$332,840

FY2013 = \$332,840

FY2014 = \$332,840

There are no anticipated fiscal implications for local government.

Ms. Dodson has determined that, for each year of the first five year period the amendments will be in effect, the public benefit anticipated as a result of enforcing the amended rule will be assuring that the Texas State Board of Pharmacy is adequately funded to carry out its mission. The effect on large, small or micro-businesses (pharmacies) required to comply with the amended rule will be an increase of \$106 for an initial registration and an increase of \$106 for the renewal of a registration.

The economic cost to an individual will be the same as the economic cost to a business, if the individual chooses to pay the business registration fee.

Comments on the proposed new rules, amendments and repeals may be submitted to Allison Benz, R.Ph., M.S., Director of Professional Services, Texas State Board of Pharmacy, 333 Guadalupe Street, Suite 3-600, Austin, Texas 78701, FAX (512) 305-8082. Comments must be received by 5 p.m., July 31, 2009.

The amendments are proposed under §§551.002 and §554.051 of the Texas Pharmacy Act (Chapters 551 - 566 and 568 - 569, Texas Occupations Code). The Board interprets §551.002 as authorizing the agency to protect the public through the effective control and regulation of the practice of pharmacy. The Board interprets §554.051(a) as authorizing the agency to adopt rules for the proper administration and enforcement of the Act.

The statutes affected by the amendments: Chapters 551 - 566 and 568 - 569, Texas Occupations Code.

##### §291.6. Pharmacy License Fees.

###### (a) Initial License Fee.

(1) The fee for an initial license shall be \$491 [~~\$385~~] for a two year registration and for processing the application and issuance of the pharmacy license as authorized by the Act §554.006.

###### (2) In addition, the following fees shall be collected:

(A) \$15 surcharge to fund a program to aid impaired pharmacists and pharmacy students as authorized by the Act §564.051;

(B) \$10 surcharge to fund TexasOnline as authorized by Chapter 2054, Subchapter I, Government Code; and

(C) \$5 surcharge to fund the Office of Patient Protection as authorized by Chapter 101, Subchapter G, Occupations Code.

(3) New pharmacy licenses shall be assigned an expiration date and initial registration fee shall be prorated based on the assigned expiration date.

(b) Biennial License Renewal. The Texas State Board of Pharmacy shall require biennial renewal of all pharmacy licenses provided under the Act §561.002.

###### (c) Renewal Fee.

(1) The fee for biennial renewal of a pharmacy license shall be \$491 [~~\$385~~] for processing the application and issuance of the pharmacy license as authorized by the Act §554.006;

###### (2) In addition, the following fees shall be collected:

(A) \$15 surcharge to fund a program to aid impaired pharmacists and pharmacy students as authorized by the Act §564.051;

(B) \$10 surcharge to fund TexasOnline as authorized by Chapter 2054, Subchapter I, Government Code; and

(C) \$2 surcharge to fund the Office of Patient Protection as authorized by Chapter 101, Subchapter G, Occupations Code.

(d) Duplicate or Amended Certificates. The fee for issuance of an amended pharmacy license renewal certificate shall be \$20.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902102

Gay Dodson, R.Ph.  
Executive Director/Secretary  
Texas State Board of Pharmacy  
Earliest possible date of adoption: July 12, 2009  
For further information, please call: (512) 305-8028



## SUBCHAPTER B. COMMUNITY PHARMACY (CLASS A)

### 22 TAC §291.32

The Texas State Board of Pharmacy proposes amendments to §291.32 concerning Personnel. The amendments, if adopted, allow Class A pharmacies that dispense no more than 20 prescription drugs to have a 1:5 ratio of pharmacists to pharmacy technicians/pharmacy technician trainees. The amendments, if adopted, eliminate the requirement for such pharmacies to be primarily involved in non-sterile compounding.

Gay Dodson, R.Ph., Executive Director/Secretary, has determined that, for the first five-year period the rule is in effect, there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Ms. Dodson has determined that, for each year of the first five-year period the rule will be in effect, the public benefit anticipated as a result of enforcing the rule will be to expand the number of pharmacies with a limited scope of practice to have more technicians being supervised by pharmacists to provide increased services to the patients. There is no fiscal impact for individuals, small or large businesses or to other entities which are required to comply with this section.

Comments on the proposed amendments may be submitted to Allison Benz, R.Ph., M.S., Director of Professional Services, Texas State Board of Pharmacy, 333 Guadalupe Street, Suite 3-600, Austin, Texas 78701, FAX (512) 305-8082. Comments must be received by 5 p.m., July 31, 2009.

The amendments are proposed under §551.002, and §554.051, of the Texas Pharmacy Act (Chapters 551 - 566 and 568 - 569, Texas Occupations Code). The Board interprets §551.002 as authorizing the agency to protect the public through the effective control and regulation of the practice of pharmacy. The Board interprets §554.051(a) as authorizing the agency to adopt rules for the proper administration and enforcement of the Act.

The statutes affected by this rule: Texas Pharmacy Act, Chapters 551 - 566 and 568 - 569, Texas Occupations Code.

#### §291.32. *Personnel.*

- (a) - (c) (No change.)
- (d) Pharmacy Technicians and Pharmacy Technician Trainees.
  - (1) - (2) (No change.)
  - (3) Ratio of pharmacist to pharmacy technicians and pharmacy technician trainees.
    - (A) Except as provided in subparagraph (B) of this paragraph, the ratio of pharmacists to pharmacy technicians and pharmacy technician trainees may be 1:3, provided at least one of the three is a pharmacy technician. The ratio of pharmacists to pharmacy technician trainees may not exceed 1:2.
    - (B) As specified in §568.006 of the Act, a Class A pharmacy [~~that primarily compounds non-sterile pharmaceuticals~~]

may have a ratio of pharmacists to pharmacy technicians/pharmacy technician trainees of 1:5 provided:

- (i) the Class A pharmacy:
  - (I) dispenses no more than 20 different prescription drugs; and
  - (II) does not produce sterile preparations including intravenous or intramuscular drugs on-site; and
- (ii) the following conditions are met:
  - (I) at least four are pharmacy technicians and not pharmacy technician trainees; and
  - (II) The pharmacy has written policies and procedures regarding the supervision of pharmacy technicians and pharmacy technician trainees, including requirements that the pharmacy technicians and pharmacy technician trainees included in a 1:5 ratio may be involved only in one process at a time. For example, a technician/trainee who is compounding non-sterile preparations or who is involved in the preparation of prescription drug orders may not also call physicians for authorization of refills.
- (e) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902103

Gay Dodson, R.Ph.  
Executive Director/Secretary  
Texas State Board of Pharmacy  
Earliest possible date of adoption: July 12, 2009  
For further information, please call: (512) 305-8028



## SUBCHAPTER D. INSTITUTIONAL PHARMACY (CLASS C)

### 22 TAC §§291.72 - 291.76

The Texas State Board of Pharmacy proposes amendments to §291.72 concerning Definitions, §291.73 concerning Personnel, §291.74 concerning Operational Standards, §291.75 concerning Records, and §291.76 concerning Class C Pharmacies Located in a Freestanding Ambulatory Surgical Center. The amendments, if adopted, incorporate recommendations made by the Task Force on Class C Pharmacy Rules as follows: clarify the definition of an inpatient and change all references from inpatient to patient; allow for a quarterly inspection of automated medication supply systems provided certain monitoring and security features are present; delete the need for in-process checking of prepacking and labeling of unit and multi-dose packages by pharmacy technicians, but keep the final check by pharmacists; change the word typewriter to data processing system and printer; add electronic receiving of medication orders; define labeling requirements for discharge prescriptions; allow pharmacy technicians to re-stock automated medication supply cabinets provided a pharmacist conducts checking, provided machine readable product identifier information is used in the final verification; delete tripeleennamine (PBZ) from drugs considered as controlled substances; replace reference to supportive personnel with pharmacy technician and phar-

macy technician trainee; delete requirements that dangerous drugs be supplied to discharged emergency room patients on a telephone call by physician. The amendments, if adopted, also incorporate staff recommendations to update/correct references to other rules and update the rules to be consistent with other sections of the rules.

Gay Dodson, R.Ph., Executive Director/Secretary, has determined that, for the first five-year period the rules are in effect, there will be no fiscal implications for state or local government as a result of enforcing or administering the rules.

Ms. Dodson has determined that, for each year of the first five-year period the rules will be in effect, the public benefit anticipated as a result of enforcing the rules will be to ensure the safety and welfare of patients receiving medications from Class C pharmacies. There is no fiscal impact for individuals, small or large businesses or to other entities which are required to comply with the rules.

Comments on the proposed amendments may be submitted to Allison Benz, R.Ph., M.S., Director of Professional Services, Texas State Board of Pharmacy, 333 Guadalupe Street, Suite 3-600, Austin, Texas 78701, FAX (512) 305-8082. Comments must be received by 5 p.m., July 31, 2009.

The amendments are proposed under §551.002, and §554.051, of the Texas Pharmacy Act (Act) (Chapters 551 - 566 and 568 - 569, Texas Occupations Code). The Board interprets §551.002 as authorizing the agency to protect the public through the effective control and regulation of the practice of pharmacy. The Board interprets §554.051(a) as authorizing the agency to adopt rules for the proper administration and enforcement of the Act.

The statutes affected by this rule: Texas Pharmacy Act, Chapters 551 - 566 and 568 - 569, Texas Occupations Code.

§291.72. *Definitions.*

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

(1) - (11) (No change.)

(12) Direct copy--Electronic copy or carbonized copy of a medication order, including a facsimile (FAX) or digital image~~], teletypewriter, or a copy transmitted between computers~~].

(13) - (19) (No change.)

(20) Facility--

(A) a hospital or other patient ~~[in-patient]~~ facility that is licensed under Chapter 241 or 577, Health and Safety Code;

(B) a hospice patient ~~[in-patient]~~ facility that is licensed under Chapter 142, Health and Safety Code;

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

(21) - (23) (No change.)

(24) Hard copy--A physical document that is readable without the use of a special device (i.e., data processing system, computer, etc.) ~~[cathode ray tube (CRT), microfiche reader, etc.]~~.

(25) (No change.)

~~[(26) Inpatient--A person who is duly admitted to the licensed hospital or other hospital or facility maintained or operated by the state, or who is receiving long term care services or Medicare extended care services in a swing bed on the hospital premise or an adjacent, readily accessible facility which is under the authority of the~~

~~hospital's governing body. For the purposes of this definition, the term "long term care services" means those services received in a skilled nursing facility which is a distinct part of the hospital and the distinct part is not licensed separately or formally approved as a nursing home by the state, even though it is designated or certified as a skilled nursing facility. An inpatient includes a person confined in any correctional institution operated by the state of Texas.]~~

(26) ~~[(27)]~~ Institutional pharmacy--Area or areas in a facility where drugs are stored, bulk compounded, delivered, compounded, dispensed, and distributed to other areas or departments of the facility, or dispensed to an ultimate user or his or her agent.

(27) ~~[(28)]~~ Investigational new drug--New drug intended for investigational use by experts qualified to evaluate the safety and effectiveness of the drug as authorized by the Food and Drug Administration.

(28) ~~[(29)]~~ Medical Practice Act--The Texas Medical Practice Act, Subtitle B, Occupations Code, as amended.

(29) ~~[(30)]~~ Medication order--A written order from a practitioner or a verbal order from a practitioner or his authorized agent for administration of a drug or device.

(30) ~~[(31)]~~ Part-time pharmacist--A pharmacist either employed or under contract, who routinely works less than full-time.

(31) Patient--A person who is receiving services at the facility (including patients receiving ambulatory procedures and patients conditionally admitted as observation patients), or who is receiving long term care services or Medicare extended care services in a swing bed on the hospital premise or an adjacent, readily accessible facility that is under the authority of the hospital's governing body. For the purposes of this definition, the term "long term care services" means those services received in a skilled nursing facility which is a distinct part of the hospital and the distinct part is not licensed separately or formally approved as a nursing home by the state, even though it is designated or certified as a skilled nursing facility. A patient includes a person confined in any correctional institution operated by the state of Texas.

(32) - (37) (No change.)

(38) Pre-packaging--The act of re-packaging and re-labeling quantities of drug products from a manufacturer's original container into unit-dose packaging or a multiple dose container for distribution within the facility except as specified in §291.74(f)(3)(B) of this title (relating to Operational Standards).

(39) - (40) (No change.)

(41) Quality assurance--The set of activities used to assure that the process used in the preparation of sterile drug preparations ~~[products]~~ lead to preparations ~~[products]~~ that meet predetermined standards of quality.

(42) Quality control--The set of testing activities used to determine that the ingredients, components (e.g., containers), and final sterile preparations ~~[pharmaceuticals]~~ prepared meet predetermined requirements with respect to identity, purity, non-pyrogenicity, and sterility.

(43) - (48) (No change.)

§291.73. *Personnel.*

(a) Requirements for pharmacist services.

(1) A Class C pharmacy in a facility licensed for 101 beds or more shall be under the continuous on-site supervision of a pharmacist during the time it is open for pharmacy services; provided, however, that pharmacy technicians and pharmacy technician trainees may

distribute prepackaged and prelabeled drugs from a drug storage area of the facility e.g., a surgery suite, [satellite pharmacy] in the absence of physical [on-site] supervision of a pharmacist, under the following conditions:

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

(2) A Class C pharmacy in a facility licensed for 100 beds or less shall have the services of a pharmacist at least on a part-time or consulting basis according to the needs of the facility except that a pharmacist shall be on-site at least once every seven days.

(3) (No change.)

(b) Pharmacist-in-charge.

(1) General.

(A) Each institutional pharmacy in a facility with 101 beds or more shall have one full-time pharmacist-in-charge, who may be pharmacist-in-charge for only one such pharmacy except as specified in subparagraph (C) of this paragraph.

(B) - (E) (No change.)

(2) Responsibilities. The pharmacist-in-charge shall have the responsibility for, at a minimum, the following:

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

(C) supervising a system to assure maintenance of effective controls against the theft or diversion of prescription drugs, and records for such drugs;

(D) [~~(C)~~] providing written guidelines and approval of the procedure to assure that all pharmaceutical requirements are met when any part of preparing, sterilizing, and labeling of sterile preparations is not performed under direct pharmacy supervision;

(E) [~~(D)~~] participating in the development of a formulary for the facility, subject to approval of the appropriate committee of the facility;

(F) [~~(E)~~] developing a system to assure that drugs to be administered to patients [inpatients] are distributed pursuant to an original or direct copy of the practitioner's medication order;

(G) [~~(F)~~] developing a system for the filling and labeling of all containers from which drugs are to be distributed or dispensed;

(H) [~~(G)~~] assuring that the pharmacy maintains and makes available a sufficient inventory of antidotes and other emergency drugs as well as current antidote information, telephone numbers of regional poison control center and other emergency assistance organizations, and such other materials and information as may be deemed necessary by the appropriate committee of the facility;

(I) [~~(H)~~] maintaining records of all transactions of the institutional pharmacy as may be required by applicable law, state and federal, and as may be necessary to maintain accurate control over and accountability for all pharmaceutical materials including pharmaceuticals, components used in the compounding of preparations [pharmaceuticals], and participate in policy decisions regarding prescription drug delivery devices;

(J) [~~(I)~~] participating in those aspects of the facility's patient care evaluation program which relate to pharmaceutical utilization and effectiveness;

(K) [~~(J)~~] participating in teaching and/or research programs in the facility;

(L) [~~(K)~~] implementing the policies and decisions of the appropriate committee(s) relating to pharmaceutical services of the facility;

(M) [~~(L)~~] providing effective and efficient messenger or delivery service to connect the institutional pharmacy with appropriate areas of the facility on a regular basis throughout the normal workday of the facility;

(N) [~~(M)~~] developing a system for the labeling, storage, and distribution of investigational new drugs, including access to related drug information for healthcare personnel [maintenance of information] in the pharmacy and nursing station where such drugs are being administered, concerning the dosage form, route of administration, strength, actions, uses, side effects, adverse effects, interactions and symptoms of toxicity of investigational new drugs;

(O) [~~(N)~~] assuring that records in a data processing system are maintained such that the data processing system is in compliance with Class C (Institutional) pharmacy requirements;

(P) [~~(O)~~] assuring that a reasonable effort is made to obtain, record, and maintain patient medication records;

(Q) [~~(P)~~] assuring the legal operation of the pharmacy, including meeting all inspection and other requirements of all state and federal laws or rules governing the practice of pharmacy; and

(R) [~~(Q)~~] if the pharmacy uses an automated medication supply system, shall be responsible for the following:

(i) reviewing and approving all policies and procedures for system operation, safety, security, accuracy and access, patient confidentiality, prevention of unauthorized access, and malfunction;

(ii) inspecting medications in the automated medication supply system, at least monthly, for expiration date, misbranding, physical integrity, security, and accountability; except that inspection of medications in the automated medication supply system may be performed quarterly if:

(I) the facility uses automated medication supply systems that monitors expiration dates of prescription drugs; and

(II) security of the system is checked at regularly defined intervals (e.g., daily or weekly);

(iii) assigning, discontinuing, or changing personnel access to the automated medication supply system;

(iv) ensuring that pharmacy technicians, pharmacy technician trainees, and licensed healthcare professionals performing any services in connection with an automated medication supply system have been properly trained on the use of the system and can demonstrate comprehensive knowledge of the written policies and procedures for operation of the system; and

(v) ensuring that the automated medication supply system is stocked accurately and an accountability record is maintained in accordance with the written policies and procedures of operation.

(c) (No change.)

(d) Pharmacists.

(1) (No change.)

(2) Duties. Duties of the pharmacist-in-charge and all other pharmacists shall include, but need not be limited to the following:

(A) - (D) (No change.)

(E) accepting the responsibility for:

(i) distributing prescription drugs and devices with drug components pursuant to medication orders;

(ii) compounding and labeling of prescription drugs and devices with drug components;

(iii) proper and safe storage of prescription drugs and devices with drug components; and

(iv) maintaining proper records for prescription drugs and devices with drug components.

(3) (No change.)

(e) Pharmacy technicians and pharmacy technician trainees.

(1) (No change.)

(2) Duties. Duties may include, but need not be limited to, the following functions under the supervision of and responsible to a pharmacist:

(A) Facilities licensed for 101 beds or more. The following functions must be performed under the physically present supervision of a pharmacist:

(i) pre-packing and labeling unit and multiple dose packages, provided a pharmacist supervises and conducts a final check [in-process and final checks] and affixes his or her name, initials [signature (first initial and last name or full signature)] or electronic signature to the appropriate quality control records prior to distribution;

(ii) preparing, packaging, compounding, or labeling prescription drugs pursuant to medication orders, provided a pharmacist supervises and checks the preparation prior to distribution;

(iii) bulk compounding or batch preparation provided a pharmacist supervises and conducts in-process and final checks and affixes his or her name, initials, or electronic signature to the appropriate quality control records prior to distribution;

(iv) - (v) (No change.)

(vi) loading [~~bulk~~] unlabeled drugs into an automated compounding or counting device provided a pharmacist supervises, verifies that the system was properly loaded prior to use, and affixes his or her name, initials [signature (first initial and last name or full signature)] or electronic signature to the appropriate quality control records;

(vii) - (viii) (No change.)

(ix) compounding sterile preparations pursuant to medication orders provided the pharmacy technicians or pharmacy technician trainees:

(I) (No change.)

(II) are supervised by a pharmacist who has completed the training specified in §291.133 of this title, and who conducts in-process and final checks, and affixes his or her name, initials, or electronic signature to the label or if batch prepared, to the appropriate quality control records. (The name, initials, or electronic signature are not required on the label if it is maintained in a permanent record of the pharmacy.)

(B) Facilities licensed for 100 beds or less.

(i) Physically present supervision. The following functions must be performed under the physically present supervision of a pharmacist:

(I) pre-packing and labeling unit and multiple dose packages, provided a pharmacist supervises and conducts a

final check [in-process and final checks] and affixes his or her name, initials [signature (first initial and last name or full signature)] or electronic signature to the appropriate quality control records prior to distribution;

(II) bulk compounding or batch preparation provided a pharmacist supervises and conducts in-process and final checks and affixes his or her name, initials, or electronic signature to the appropriate quality control records prior to distribution;

(III) loading [~~bulk~~] unlabeled drugs into an automated compounding or counting device provided a pharmacist supervises, verifies that the system was properly loaded prior to use, and affixes his or her name, initials, [signature (first initial and last name or full signature)] or electronic signature to the appropriate quality control records; and

(IV) compounding medium-risk and high-risk sterile preparations pursuant to medication orders provided the pharmacy technicians or pharmacy technician trainees:

(-a-) (No change.)

(-b-) are supervised by a pharmacist who has completed the training specified in §291.133 of this title and who conducts in-process and final checks, and affixes his or her name, initials, or electronic signature to the label or if batch prepared, to the appropriate quality control records. (The name, initials, or electronic signature are not required on the label if it is maintained in a permanent record of the pharmacy.)

(ii) Electronic supervision or physically present supervision. The following functions may be performed under the electronic supervision or physically present supervision of a pharmacist:

(I) preparing, packaging, or labeling prescription drugs pursuant to medication orders, provided a pharmacist checks the preparation prior to distribution;

(II) - (V) (No change.)

(VI) compounding low-risk sterile preparations pursuant to medication orders provided the pharmacy technicians or pharmacy technician trainees:

(-a-) (No change.)

(-b-) are supervised by a pharmacist who has completed the training specified in §291.133 of this title, and who conducts in-process and final checks, and affixes his or her name, initials, or electronic signature to the label or if batch prepared, to the appropriate quality control records. (The name, initials, or electronic signature are not required on the label if it is maintained in a permanent record of the pharmacy.)

(3) (No change.)

(f) - (g) (No change.)

#### §291.74. Operational Standards.

(a) Licensing requirements.

(1) - (5) (No change.)

(6) A Class C pharmacy shall notify the board in writing within 10 days of closing, following the procedures in §291.5 of this title (relating to Closing a Pharmacy [Closed Pharmacies]).

(7) - (9) (No change.)

(10) A Class C (Institutional) pharmacy engaged in the compounding of non-sterile preparations [non-sterile compounding of drug products for inpatients of the hospital] shall comply with the provisions of §291.131 of this title (relating to Pharmacies Compounding Non-sterile Preparations);

(11) A Class C (Institutional) pharmacy engaged in the compounding of sterile preparations [pharmaceuticals] shall comply with the provisions of §291.133 of this title (relating to Pharmacies Compounding Sterile Preparations).

(12) (No change.)

(13) A Class C (Institutional) pharmacy engaged in centralized prescription dispensing and/or prescription drug or medication order processing shall comply with the provisions of §291.123 of this title (relating to Central [Centralized] Prescription Drug or Medication Order Processing) and/or §291.125 of this title (relating to Centralized Prescription Dispensing).

(b) Environment.

(1) General requirements.

(A) - (D) (No change.)

(E) The temperature of the institutional pharmacy shall be maintained within a range compatible with the proper storage of drugs. The temperature of the refrigerator and/or freezer shall be maintained within a range compatible with the proper storage of drugs [requiring refrigeration].

(F) - (G) (No change.)

(2) (No change.)

(c) Equipment and supplies. Institutional pharmacies distributing medication orders shall have the following equipment:

(1) data processing system including a printer [typewriter] or comparable equipment; and

(2) refrigerator and/or freezer and a system or device (e.g., thermometer) to monitor the temperature [and humidity] to ensure that proper storage requirements are met.

(d) (No change.)

(e) Absence of a pharmacist.

(1) Medication orders.

(A) In facilities with a full-time pharmacist, if a practitioner orders a drug for administration to a bona fide patient of the facility when the pharmacy is closed, the following is applicable.

(i) - (iv) (No change.)

(v) The pharmacist shall verify the withdrawal of drugs from the pharmacy and perform a drug regimen review as specified in subsection (g)(1)(B) of this section as soon as practical, but in no event more than 72 hours from the time of such withdrawal.

(B) In facilities with a part-time or consultant pharmacist, if a practitioner orders a drug for administration to a bona fide patient of the facility when the pharmacist is not on duty, or when the pharmacy is closed, the following is applicable.

(i) - (iii) (No change.)

(iv) The pharmacist shall verify the withdrawal of drugs from the pharmacy and perform a drug regimen review as specified in subsection (g)(1)(B) of this section after a reasonable interval, but in no event may such interval exceed seven days.

(2) Floor stock. In facilities using a floor stock method of drug distribution, the following is applicable.

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

(D) The pharmacist shall verify the withdrawal of drugs from the pharmacy after a reasonable interval, but in no event may such interval exceed seven days.

(f) Drugs.

(1) - (3) (No change.)

(4) Sterile preparations [pharmaceuticals] prepared in a location other than the pharmacy. A distinctive supplementary label shall be affixed to the container of any admixture. The label shall bear at a minimum:

(A) patient's name and location, if not immediately administered;

(B) - (E) (No change.)

(5) Distribution.

(A) Medication orders.

(i) - (ii) (No change.)

(iii) Pharmacy technicians and pharmacy technician trainees [Supportive personnel] may not receive verbal medication orders.

(iv) (No change.)

(B) Procedures.

(i) (No change.)

(ii) The written policies and procedures for the drug distribution system shall include, but not be limited to, procedures regarding the following:

(I) - (XXIV) (No change.)

(XXV) routine distribution of patient [inpatient] medication;

(XXVI) preparation and distribution of sterile preparations [pharmaceuticals];

(XXVII) - (XXIX) (No change.)

(XXX) drug administration to include infusion devices and[-] drug delivery systems[-] and first dose monitoring;

(XXXI) - (XXXV) (No change.)

(6) Discharge Prescriptions. Discharge prescriptions must be dispensed and labeled in accordance with §291.33 of this title (relating to Occupational Standards) except that certain medications packaged in unit-of-use containers, such as metered-dose inhalers, insulin pens, topical creams or ointments, or ophthalmic or otic preparation that are administered to the patient during the time the patient was a patient in the hospital, may be provided to the patient upon discharge provided the pharmacy receives a discharge order and the product bears a label containing the following information:

(A) name of the patient;

(B) name and strength of the medication;

(C) name of the prescribing or attending practitioner;

(D) directions for use;

(E) duration of therapy (if applicable); and

(F) name and telephone number of the pharmacy.

(g) (No change.)

(h) Emergency rooms.

(1) (No change.)

(2) When a pharmacist is not on duty in the facility, the following is applicable for supplying prescription drugs to be taken home by the patient for self-administration from the emergency room. If the patient has been admitted to the emergency room and assessed by a practitioner at the hospital, the following procedures shall be observed in supplying prescription drugs from the emergency room.

~~[(A) If the patient has been admitted to the emergency room and assessed by a practitioner at the hospital, the following procedures shall be observed in supplying prescription drugs from the emergency room.]~~

~~(A) [(i)] Dangerous drugs and/or controlled substances may only be supplied in accordance with the system of control and accountability for dangerous drugs and/or controlled substances administered or supplied from the emergency room; such system shall be developed and supervised by the pharmacist-in-charge or staff pharmacist designated by the pharmacist-in-charge.~~

~~(B) [(ii)] Only dangerous drugs and/or controlled substances listed on the emergency room drug list may be supplied; such list shall be developed by the pharmacist-in-charge and the facility's emergency department committee (or like group or person responsible for policy in that department) and shall consist of dangerous drugs and/or controlled substances of the nature and type to meet the immediate needs of emergency room patients.~~

~~(C) [(iii)] Dangerous drugs and/or controlled substances may only be supplied in prepackaged quantities not to exceed a 72-hour supply in suitable containers and appropriately prelabeled (including necessary auxiliary labels) by the institutional pharmacy.~~

~~(D) [(iv)] At the time of delivery of the dangerous drugs and/or controlled substances, the practitioner or licensed nurse under the supervision of a practitioner shall appropriately complete the label with at least the following information:~~

~~(i) [(I)] name, address, and phone number of the facility;~~

~~(ii) [(II)] date supplied;~~

~~(iii) [(III)] name of practitioner;~~

~~(iv) [(IV)] name of patient;~~

~~(v) [(V)] directions for use;~~

~~(vi) [(VI)] brand name and strength of the dangerous drug or controlled substance; or if no brand name, then the generic name, strength, and the name of the manufacturer or distributor of the dangerous drug or controlled substance;~~

~~(vii) [(VII)] quantity supplied; and~~

~~(viii) [(VIII)] unique identification number.~~

~~(E) [(v)] The practitioner, or a licensed nurse under the supervision of the practitioner, shall give the appropriately labeled, prepackaged drug to the patient and explain the correct use of the drug.~~

~~(F) [(vi)] A perpetual record of dangerous drugs and/or controlled substances supplied from the emergency room shall be maintained in the emergency room. Such record shall include the following:~~

~~(i) [(I)] date supplied;~~

~~(ii) [(II)] practitioner's name;~~

~~(iii) [(III)] patient's name;~~

~~(iv) [(IV)] brand name and strength of the dangerous drug or controlled substance; or if no brand name, then the generic name, strength, and the name of the manufacturer or distributor of the dangerous drug or controlled substance;~~

~~(v) [(V)] quantity supplied; and~~

~~(vi) [(VI)] unique identification number.~~

~~(G) [(vii)] The pharmacist-in-charge, or staff pharmacist designated by the pharmacist-in-charge, shall verify the correctness of this record at least once every seven days.~~

~~[(B) If the patient has been admitted to the emergency room of a hospital and a practitioner telephones an order for a dangerous drug to be supplied, the following is applicable.]~~

~~[(i) Dangerous drugs may only be supplied to patients of hospitals after the normal business hours of local pharmacies and when pharmacy services are not reasonably available to the patient.]~~

~~[(ii) The practitioner shall cosign any order for a dangerous drug which is telephoned to the hospital emergency room within 72 hours.]~~

~~[(iii) The practitioner shall have a previous patient/physician relationship with the patient admitted to the emergency room.]~~

~~[(iv) The dangerous drugs may only be supplied in accordance with the system of control and accountability for drugs administered or supplied from the emergency room; such system shall be developed and supervised by the pharmacist-in-charge or staff pharmacist designated by the pharmacist-in-charge.]~~

~~[(v) Only dangerous drugs listed on the emergency room drug list may be supplied; such list shall be developed by the pharmacist-in-charge and the facility's emergency department committee (or like group or person responsible for policy in that department) and shall consist of dangerous drugs of the nature and type to meet the immediate needs of emergency room patients.]~~

~~[(vi) The dangerous drugs may only be supplied in prepackaged quantities not to exceed a 72-hour supply in suitable containers and appropriately prelabeled (including necessary auxiliary labels) by the institutional pharmacy.]~~

~~[(vii) At any time of delivery of the dangerous drugs, a licensed nurse shall complete the label with at least the following information:]~~

~~[(I) name, address, and phone number of the facility;]~~

~~[(II) date supplied;]~~

~~[(III) name of the practitioner;]~~

~~[(IV) name of the patient;]~~

~~[(V) directions for use;]~~

~~[(VI) brand name and strength of the dangerous drug; or if no brand name, then the generic name, strength, and the name of the manufacturer or distributor of the dangerous drug;]~~

~~[(VII) quantity supplied; and]~~

~~[(VIII) unique identification number.]~~

~~[(viii) A licensed nurse shall give the appropriately labeled, prepackaged dangerous drug to the patient and explain the correct use of the drug.]~~

~~[(ix) A perpetual record of dangerous drugs supplied from the emergency room shall be maintained in the emergency room. Such record shall include the following:]~~

~~[(I) date supplied;]~~

~~[(II) practitioner's name;]~~

~~[(III) patient's name;]~~

~~[(IV) brand name and strength of the dangerous drug; or if no brand name, then the generic name, strength, and the name of the manufacturer or distributor of the dangerous drug;]~~

~~[(V) quantity supplied; and]~~

~~[(VI) unique identification number.]~~

~~[(x) The pharmacist in charge or staff pharmacist designated by the pharmacist in charge shall verify the correctness of this record at least once every seven days.]~~

~~[(C) Prior to implementing the procedures for supplying dangerous drugs to emergency room patients of a hospital on the telephone order of a practitioner, as specified in subparagraph (B) of this paragraph, the hospital shall notify the board of its intent to implement this policy. Such notification shall be signed by the hospital administrator, medical director, and pharmacist in charge and contain the following information:]~~

~~[(i) the hours the hospital pharmacy is open for pharmacy services; and]~~

~~[(ii) documentation of the lack of pharmacy services after normal business hours of the hospital pharmacy.]~~

(i) (No change.)

(j) Automated devices and systems.

(1) Automated compounding or counting devices. If a pharmacy uses automated compounding or counting devices:

(A) (No change.)

(B) the devices may be loaded with ~~[bulk of]~~ unlabeled drugs only by a pharmacist or by pharmacy technicians or pharmacy technician trainees under the direction and direct supervision of a pharmacist;

(C) (No change.)

(D) records of loading ~~[bulk of]~~ unlabeled drugs into an automated compounding or counting device shall be maintained to show:

~~(i) - (vii) (No change.)~~

(E) (No change.)

(2) Automated medication supply systems.

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

(C) Policies and procedures of operation.

(i) When an automated medication supply system is used to store or distribute medications for administration pursuant to medication orders, it shall be operated according to written policies and procedures of operation. The policies and procedures of operation shall establish requirements for operation of the automated medication supply system and shall describe policies and procedures that:

(I) (No change.)

(II) provide for a pharmacist's review and approval of each original or new medication order prior to withdrawal

from [filled through the use of] the automated medication supply system:

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

~~(III) - VII~~

~~(ii) (No change.)~~

(D) Automated medication supply systems used for storage and recordkeeping of medications located outside of the pharmacy department (e.g., Pyxis). A pharmacy technician or pharmacy technician trainee may re-stock an automated medication supply system located outside of the pharmacy department with prescription drugs other than IV admixtures provided:

(i) prior to distribution of the prescription drugs a pharmacist verifies that the prescription drugs pulled to stock the automated supply system match the list of prescription drugs generated by the automated medication supply system;

(ii) the prescription drugs to re-stock the system are labeled with a machine readable product identifier, such as a barcode;

(iii) any previous manipulation of the product such as repackaging or extemporaneous compounding has been checked by a pharmacist; and

(iv) quality assurance audits are conducted according to established policies and procedures to ensure accuracy of the process.

(E) ~~[(D)]~~ Recovery Plan. A pharmacy which uses an automated medication supply system to store or distribute medications for administration pursuant to medication orders shall maintain a written plan for recovery from a disaster or any other situation which interrupts the ability of the automated medication supply system to provide services necessary for the operation of the pharmacy. The written plan for recovery shall include:

(i) planning and preparation for maintaining pharmacy services when an automated medication supply system is experiencing downtime;

(ii) procedures for response when an automated medication supply system is experiencing downtime;

(iii) procedures for the maintenance and testing of the written plan for recovery; and

(iv) procedures for notification of the Board and other appropriate agencies whenever an automated medication supply system experiences downtime for more than two days of operation or a period of time which significantly limits the pharmacy's ability to provide pharmacy services.

(3) Verification of medication orders prepared by the pharmacy department through the use of an automated medication supply system. A pharmacist must check drugs prepared pursuant to medication orders to ensure that the drug is prepared for distribution accurately as prescribed. This paragraph does not apply to automated medication supply systems used for storage and recordkeeping of medications located outside of the pharmacy department.

(A) This check shall be considered accomplished if:

(i) (No change.)

(ii) the following checks are conducted by a pharmacist:

(I) if the automated medication supply system contains unlabeled [bulk] stock drugs, a pharmacist verifies that those drugs have been accurately stocked; and



(II) (No change.)

(B) If the final check is accomplished as specified in subparagraph (A)(ii) of this paragraph, the following additional requirements must be met.

(i) - (ii) (No change.)

(iii) The automated medication supply system documents and maintains:

(I) (No change.)

(II) the name(s), initials, or identification code(s) and specific activity(ies) of each pharmacist or pharmacy technician or pharmacy technician trainee who performs any other portion of the medication order preparation process.

(iv) (No change.)

(4) (No change.)

§291.75. *Records.*

(a) - (b) (No change.)

(c) Patient [~~Inpatient~~] records.

(1) (No change.)

(2) Patient medication records (PMR). A patient medication record shall be maintained for each patient [~~inpatient~~] of the facility. The PMR shall contain at a minimum the following information.

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

(3) (No change.)

(4) Schedule II controlled substances records. Records of controlled substances listed in Schedule II shall be maintained as follows.

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

(C) Distribution records for controlled substances listed in Schedule II shall bear the following information:

(i) - (iv) (No change.)

(v) name, initials, [signature (first initial and last name or full signature)] or electronic signature of the individual administering the controlled substance;

(vi) - (vii) (No change.)

(5) Floor stock records.

(A) Distribution records for Schedule II - V controlled substances floor stock shall include the following information:

(i) - (v) (No change.)

(vi) name, initials, [signature (first initial and last name or full signature)] or electronic signature of the individual administering drug;

(vii) - (viii) (No change.)

(B) - (C) (No change.)

(6) General requirements for records maintained in a data processing system.

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

(C) Change or discontinuance of a data processing system.

(i) Records of distribution and return for all controlled substances, nalbuphine (e.g., Nubain)[ ~~tripelemamine (e.g.,~~

~~PBZ)] and carisoprodol (e.g., Soma). A pharmacy that changes or discontinues use of a data processing system must:~~

(I) - (II) (No change.)

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

(D) (No change.)

(7) Data processing system maintenance of records for the distribution and return of all controlled substances, nalbuphine (e.g., Nubain)[ ~~tripelemamine (e.g., PBZ);~~] and carisoprodol (e.g., Soma) to the pharmacy.

(A) Each time a controlled substance, nalbuphine (e.g., Nubain)[ ~~tripelemamine (e.g., PBZ);~~] or carisoprodol (e.g., Soma) is distributed from or returned to the pharmacy, a record of such distribution or return shall be entered into the data processing system.

(B) The data processing system shall have the capacity to produce a hard copy printout of an audit trail of drug distribution and return for any strength and dosage form of a drug (by either brand or generic name or both) during a specified time period. This printout shall contain the following information:

(i) - (iv) (No change.)

(v) if not immediately retrievable via electronic image [~~CRT display~~], the following shall also be included on the printout:

(I) - (II) (No change.)

(C) An audit trail printout for each strength and dosage form of these drugs distributed during the preceding month shall be produced at least monthly and shall be maintained in a separate file at the facility unless the pharmacy complies with subparagraph (D) of this section. The information on this printout shall be sorted by drug name and list all distributions/returns for that drug chronologically.

(D) (No change.)

(8) - (9) (No change.)

(d) - (f) (No change.)

§291.76. *Class C Pharmacies Located in a Freestanding Ambulatory Surgical Center.*

(a) (No change.)

(b) Definitions. The following words and terms, when used in these sections, shall have the following meanings, unless the context clearly indicates otherwise.

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

(7) Direct copy--Electronic copy or carbonized copy of a medication order including a facsimile (FAX) or digital image[~~; teleautograph, or a copy transmitted between computers~~].

(8) - (13) (No change.)

(14) Hard copy--A physical document that is readable without the use of a special device (i.e., data processing system, computer, etc. [~~cathode ray tube (CRT); microfiche reader, etc.~~]).

(15) - (25) (No change.)

(c) Personnel.

(1) Pharmacist-in-charge.

(A) (No change.)

(B) Responsibilities. The pharmacist-in-charge shall have the responsibility for, at a minimum, the following:

(i) - (ii) (No change.)

(iii) ~~distribution of drugs to be administered to patients [inpatients]~~ pursuant to an original or direct copy of the practitioner's medication order;

(iv) (No change.)

(v) maintaining and making available a sufficient inventory of antidotes and other emergency drugs, both in the pharmacy and ~~patient [inpatient]~~ care areas, as well as current antidote information, telephone numbers of regional poison control center and other emergency assistance organizations, and such other materials and information as may be deemed necessary by the appropriate committee of the ASC;

(vi) - (xiii) (No change.)

(2) (No change.)

(3) Pharmacists.

(A) General.

(i) - (ii) (No change.)

(iii) All pharmacists shall be responsible for any delegated act performed by pharmacy technicians or pharmacy technician trainees under his or her supervision.

(iv) (No change.)

(B) - (C) (No change.)

(4) Pharmacy technicians and pharmacy technician trainees.

(A) (No change.)

(B) Duties. Duties may include, but need not be limited to, the following functions, under the direct supervision of a pharmacist:

(i) prepacking and labeling unit and multiple dose packages, provided a pharmacist supervises and conducts a final check [in-process and final checks] and affixes his or her name, initials, [signature or] electronic signature to the appropriate quality control records prior to distribution;

(ii) (No change.)

(iii) compounding non-sterile preparations pursuant to medication orders provided the pharmacy technicians or pharmacy technician trainees have completed the training specified in §291.131 of this title;

(iv) compounding sterile preparations pursuant to medication orders provided the pharmacy technicians or pharmacy technician trainees:

(I) have completed the training specified in §291.133 of this title; and

(II) are supervised by a pharmacist who has completed the sterile preparations training specified in §291.133 of this title, conducts in-process and final checks, and affixes his or her name, initials, or electronic signature to the label or if batch prepared to the appropriate quality control records. (The name, initials, or electronic signature are not required on the label if it is maintained in a permanent record of the pharmacy.)

~~[(iii) compounding non-sterile and sterile preparations pursuant to medication orders;]~~

~~[(I) have completed the training specified in §291.26 of this title (relating to Pharmacies Compounding Sterile Pharmaceuticals); and]~~

~~[(II) are supervised by a pharmacist who has completed the sterile products training specified in §291.26 of this title, conducts in-process and final checks, and affixes his or her initials to the label or if batch prepared, to the appropriate quality control records. (The initials are not required on the label if it is maintained in a permanent record of the pharmacy.)]~~

~~(v) [(iv)] bulk compounding, provided a pharmacist supervises and conducts in-process and final checks and affixes his or her name, initials, or electronic signature to the appropriate quality control records prior to distribution;~~

~~(vi) [(v)] distributing routine orders for stock supplies to patient care areas;~~

~~(vii) [(vi)] entering medication order and drug distribution information into a data processing system, provided judgmental decisions are not required and a pharmacist checks the accuracy of the information entered into the system prior to releasing the order or in compliance with the absence of pharmacist requirements contained in subsection (d)(6)(E) and (F) of this section;~~

~~(viii) [(vii)] maintaining inventories of drug supplies;~~

~~(ix) [(viii)] maintaining pharmacy records; and~~

~~(x) [(ix)] loading bulk unlabeled drugs into an automated drug dispensing system provided a pharmacist supervises, verifies that the system was properly loaded prior to use, and affixes his or her name, initials or [signature] or electronic signature to the appropriate quality control records.~~

(C) Procedures.

(i) (No change.)

(ii) Pharmacy technicians and pharmacy technician trainees shall handle prescription drug orders in the same manner as pharmacy technicians or pharmacy technician trainees working in a Class A pharmacy.

(D) Special requirements for compounding.

(i) (No change.)

(ii) Sterile Preparations. All pharmacy technicians and pharmacy technician trainees engaged in compounding sterile preparations shall meet the training requirements specified in §291.133 [§291.134] of this title.

(5) - (6) (No change.)

(d) Operational standards.

(1) Licensing requirements.

(A) - (E) (No change.)

(F) An ASC pharmacy shall notify the board in writing within 10 days of closing, following the procedures in §291.5 of this title (relating to Closing a Pharmacy [Closed Pharmacies]).

(G) - (I) (No change.)

(J) An ASC pharmacy engaged in the compounding of non-sterile preparations [non-sterile compounding of drug products for inpatients of the hospital] shall comply with the provisions of §291.131 of this title.

(K) An ASC pharmacy engaged in the compounding of sterile preparations [pharmaceuticals] shall comply with the provisions of §291.133 of this title.

(L) - (M) (No change.)

(2) (No change.)

(3) Equipment and supplies. Ambulatory surgical centers supplying drugs for postoperative use shall have the following equipment and supplies:

(A) data processing system including a printer [type-writer] or comparable equipment; and

(B) - (C) (No change.)

(4) Library. A reference library shall be maintained that [which] includes the following in hard-copy or electronic format and that pharmacy personnel shall be capable of accessing at all times:

(A) - (F) (No change.)

(5) Drugs.

(A) Procurement, preparation, and storage.

(i) - (iii) (No change.)

(iv) All drugs shall be stored at the proper temperatures, as defined in the USP/NF and in §291.15 of this title (relating to Storage of Drugs) [by the following terms].

~~[(I) Room temperature—temperature maintained between 15 degrees Celsius (59 degrees Fahrenheit) and 30 degrees Celsius (86 degrees Fahrenheit).]~~

~~[(II) Cool—temperature between 8 degrees Celsius (46 degrees Fahrenheit) and 15 degrees Celsius (59 degrees Fahrenheit). An article for which storage in a cool place is directed may, alternatively, be stored in a refrigerator unless otherwise specified on the labeling.]~~

~~[(III) Refrigerate—temperature that is thermostatically maintained between 2 degrees Celsius (36 degrees Fahrenheit) and 8 degrees Celsius (46 degrees Fahrenheit).]~~

~~[(IV) Freeze—temperature that is thermostatically maintained between minus 20 degrees Celsius (minus 4 degrees Fahrenheit) and minus 10 degrees Celsius (14 degrees Fahrenheit).]~~

(v) - (vi) (No change.)

(B) - (C) (No change.)

(6) - (9) (No change.)

(e) Records.

(1) - (2) (No change.)

(3) Patient [Inpatient] records.

(A) - (E) (No change.)

(F) General requirements for records maintained in a data processing system are as follows.

(i) - (ii) (No change.)

(iii) Change or discontinuance of a data processing system.

(I) Records of distribution and return for all controlled substances, nalbuphine (Nubain), and carisoprodol (Soma) [tripeleminamine (PBZ)]. A pharmacy that changes or discontinues use of a data processing system must:

(-a-) - (-b-) (No change.)

(II) - (III) (No change.)

(iv) (No change.)

(G) Data processing system maintenance of records for the distribution and return of all controlled substances, nalbuphine (Nubain), or carisoprodol (Soma) [tripeleminamine (PBZ)] to the pharmacy.

(i) Each time a controlled substance, nalbuphine (Nubain), or carisoprodol (Soma) [tripeleminamine (PBZ)] is distributed from or returned to the pharmacy, a record of such distribution or return shall be entered into the data processing system.

(ii) The data processing system shall have the capacity to produce a hard-copy printout of an audit trail of drug distribution and return for any strength and dosage form of a drug (by either brand or generic name or both) during a specified time period. This printout shall contain the following information:

(I) - (IV) (No change.)

(V) if not immediately retrievable via electronic image [CRT display], the following shall also be included on the printout:

(-a-) - (-b-) (No change.)

(iii) - (iv) (No change.)

(H) - (I) (No change.)

(4) - (6) (No change.)

~~[(7) Confidentiality.]~~

~~[(A) A pharmacist shall provide adequate security of prescription drug orders, medication orders, and patient medication records to prevent indiscriminate or unauthorized access to confidential health information.]~~

~~[(B) Confidential records are privileged and may be released only to:]~~

~~[(i) the patient or the patient's agent;]~~

~~[(ii) a practitioner or another pharmacist if, in the pharmacist's professional judgement, the release is necessary to protect the patient's health and well being;]~~

~~[(iii) the board or to a person or another state or federal agency authorized by law to receive the confidential record;]~~

~~[(iv) a law enforcement agency engaged in investigation of a suspected violation of Chapter 481 or 483, Health and Safety Code, or the Comprehensive Drug Abuse Prevention and Control Act of 1970 (21 U.S.C. Section 801 et seq.);]~~

~~[(v) a person employed by a state agency that licenses a practitioner, if the person is performing the person's official duties; or]~~

~~[(vi) an insurance carrier or other third party payor authorized by a patient to receive such information.]~~

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902108

Gay Dodson, R.Ph.

Executive Director/Secretary

Texas State Board of Pharmacy

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-8028

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## CHAPTER 295. PHARMACISTS

### 22 TAC §295.5

The Texas State Board of Pharmacy proposes amendments to §295.5 concerning Pharmacist License or Renewal Fees. The proposed amendments to §295.5, if adopted, will raise pharmacist license fees based on increased expenses.

Gay Dodson, R.Ph., Executive Director/Secretary, has determined that, for the first five-year period the amendments are in effect, there will be fiscal implications for state government as a result of enforcing or administering the amended rule as follows:

#### Revenue Increase

FY2010 = \$1,127,098

FY2011 = \$1,425,806

FY2012 = \$1,425,806

FY2013 = \$1,425,806

FY2014 = \$1,425,806

There are no anticipated fiscal implications for local government.

Ms. Dodson has determined that, for each year of the first five year period the amendments will be in effect, the public benefit anticipated as a result of enforcing the amended rule will be assuring that the Texas State Board of Pharmacy is adequately funded to carry out its mission. The effect on large, small or micro-businesses (pharmacies) will be the same as the economic cost to an individual, if the pharmacy chooses to pay the fee for the individual.

Economic cost to persons who are required to comply with the amended rule will be an increase of \$106 for an initial registration and an increase of \$106 for the renewal of a registration.

Comments on the proposed amendments may be submitted to Allison Benz, R.Ph., M.S., Director of Professional Services, Texas State Board of Pharmacy, 333 Guadalupe Street, Suite 3-600, Austin, Texas 78701, FAX (512) 305-8082. Comments must be received by 5 p.m., July 31, 2009.

The amendments are proposed under §551.002 and §554.051 of the Texas Pharmacy Act (Chapters 551 - 566 and 568 - 569, Texas Occupations Code). The Board interprets §551.002 as authorizing the agency to protect the public through the effective control and regulation of the practice of pharmacy. The Board interprets §554.051(a) as authorizing the agency to adopt rules for the proper administration and enforcement of the Act.

The statutes affected by the amendments: Chapters 551 - 566 and 568 - 569, Texas Occupations Code.

#### §295.5. Pharmacist License or Renewal Fees.

(a) (No change.)

(b) Initial License Fee.

(1) The fee for the initial license shall be \$320 [~~\$214~~] for a two year registration and for processing the application and issuance of the pharmacist license as authorized by the Act, §554.006.

(2) In addition, the following fees shall be collected:

(A) \$13 surcharge to fund a program to aid impaired pharmacists and pharmacy students as authorized by the Act, §564.051;

(B) \$10 surcharge to fund TexasOnline as authorized by Chapter 2054, Subchapter I, Government Code; and

(C) \$5 surcharge to fund the Office of Patient Protection as authorized by Chapter 101, Subchapter G, Occupations Code.

(3) New pharmacist licenses shall be assigned an expiration date and initial fee shall be prorated based on the assigned expiration date.

(c) Renewal Fee.

(1) The fee for biennial renewal of a pharmacist license shall be \$320 [~~\$214~~] for processing the application and issuance of the pharmacist license as authorized by the Act, §554.006.

(2) In addition, the following fees shall be collected:

(A) \$13 surcharge to fund a program to aid impaired pharmacists and pharmacy students as authorized by the Act, §564.051;

(B) \$10 surcharge to fund TexasOnline as authorized by Chapter 2054, Subchapter I, Government Code; and

(C) \$2 surcharge to fund the Office of Patient Protection as authorized by Chapter 101, Subchapter G, Occupations Code.

(d) - (e) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902104

Gay Dodson, R.Ph.

Executive Director/Secretary

Texas State Board of Pharmacy

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-8028

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### 22 TAC §295.8

The Texas State Board of Pharmacy proposes amendments to §295.8 concerning Continuing Education Requirements. The amendments, if adopted, clarify that, for pharmacists, the ACPE number must indicate that the program is for pharmacists by the designation of the letter P, allow pharmacists to complete the same program once per licensure period, clarify the pediatric advanced life support certification is also approved for continuing education credit, allow pharmacists to receive 3 hours of continuing education credit for certification by the Board of Pharmaceutical Specialty, and allow pharmacists to receive credit for attending a program provided by the Texas State Board of Pharmacy or a course offered by the Texas State Board of Pharmacy.

Gay Dodson, R.Ph., Executive Director/Secretary, has determined that, for the first five-year period the rule is in effect, there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Ms. Dodson has determined that, for each year of the first five-year period the rule will be in effect, the public benefit anticipated as a result of enforcing the rule will be to ensure pharmacists receive appropriate and approved continuing education. There is no fiscal impact for individuals, small or large businesses or to other entities which are required to comply with this section.

Comments on the proposed amendments may be submitted to Allison Benz, R.Ph., M.S., Director of Professional Services, Texas State Board of Pharmacy, 333 Guadalupe Street, Suite 3-600, Austin, Texas 78701, FAX (512) 305-8082. Comments must be received by 5 p.m., July 31, 2009.

The amendments are proposed under §551.002, §554.051, and §559.052 of the Texas Pharmacy Act (Chapters 551 - 566 and 568 - 569, Texas Occupations Code). The Board interprets §551.002 as authorizing the agency to protect the public through the effective control and regulation of the practice of pharmacy. The Board interprets §554.051(a) as authorizing the agency to adopt rules for the proper administration and enforcement of the Act. The Board interprets §559.052 as authorizing the agency to adopt rules for the approval of continuing education programs.

The statutes affected by this rule: Texas Pharmacy Act, Chapters 551 - 566 and 568 - 569, Texas Occupations Code.

§295.8. *Continuing Education Requirements.*

(a) (No change.)

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

(1) - (5) (No change.)

(6) Certificate of completion--A certificate or other official document presented to a participant upon the successful completion of a continuing education program. Certificates presented by an ACPE approved provider must contain the following information:

(A) name of the participant;

(B) title and date of the program;

(C) name of the approved provider sponsoring or cosponsoring the program;

(D) number of contact hours and/or CEUs awarded;

(E) the assigned ACPE universal program number with a "P" designation indicating that the CE is targeted to pharmacists;

(F) a dated certifying signature of the approved provider; and

(G) the official ACPE logo.

(7) - (14) (No change.)

(c) - (d) (No change.)

(e) Approved Programs.

(1) Any program presented by an ACPE approved provider subject to the following conditions.

(A) Pharmacists may receive credit for the completion of the same ACPE course only once during [~~each year of~~] a license period.

(B) Pharmacists who present approved ACPE continuing education programs may receive credit for the time expended during the actual presentation of the program. Pharmacists may receive credit for the same presentation only once during [~~each year of~~] a license period.

(C) Proof of completion of an ACPE course shall be a certificate of completion as defined by subsection (b)(6) of this section.

(2) Courses which are part of a professional degree program or an advanced pharmacy degree program offered by a college

of pharmacy which has a professional degree program accredited by ACPE.

(A) Pharmacists may receive credit for the completion of the same course only once during [~~each year of~~] a license period.

(B) Pharmacists who teach these courses may receive credit towards their continuing education, but such credit may be received only once for teaching the same course during [~~each year of~~] a license period.

(3) Basic cardiopulmonary resuscitation (CPR) courses which lead to CPR certification by the American Red Cross or the American Heart Association shall be recognized as approved programs. Pharmacists may receive credit for one contact hour (0.1 CEU) towards their continuing education requirement for completion of a CPR course only once during [~~each year of~~] a license period. Proof of completion of a CPR course shall be the certificate issued by the American Red Cross or the American Heart Association.

(4) Advanced cardiovascular life support courses (ACLS) or pediatric advanced life support (PALS) courses which lead to initial ACLS or PALS certification by the American Heart Association shall be recognized as approved programs. Pharmacists may receive credit for twelve contact hours (1.2 CEUs) towards their continuing education requirement for completion of an ACLS or PALS course only once during a license period. Proof of completion of an ACLS or PALS course shall be the certificate issued by the American Heart Association.

(5) Advanced cardiovascular life support courses (ACLS) or pediatric advanced life support (PALS) courses which lead to ACLS or PALS recertification by the American Heart Association shall be recognized as approved programs. Pharmacists may receive credit for four contact hours (0.4 CEUs) towards their continuing education requirement for completion of an ACLS or PALS recertification course only once during a license period. Proof of completion of an ACLS or PALS recertification course shall be the certificate issued by the American Heart Association.

(6) Attendance at Texas State Board of Pharmacy Board Meetings shall be recognized for continuing education credit as follows.

(A) Pharmacists shall receive credit for three contact hours (0.3 CEUs) towards their continuing education requirement for attending a full, public board business meeting in its entirety.

(B) A maximum of six contact hours (0.6 CEUs) are allowed for attendance at a board meeting during a [~~within a pharmacist's biennial~~] license period.

(C) Proof of attendance for a complete board meeting shall be a certificate issued by the Texas State Board of Pharmacy.

(7) Participation in a Texas State Board of Pharmacy appointed Task Force shall be recognized for continuing education credit as follows.

(A) Pharmacists shall receive credit for three contact hours (0.3 CEUs) towards their continuing education requirement for participating in a Texas State Board of Pharmacy appointed Task Force.

(B) Proof of participation for a Task Force shall be a certificate issued by the Texas State Board of Pharmacy.

(8) Completion of an Institute for Safe Medication Practices' (ISMP) Medication Safety Self Assessment for hospital pharmacies or for community/ambulatory pharmacies shall be recognized for continuing education credit as follows.

(A) Pharmacists shall receive credit for three contact hours (0.3 CEUs) towards their continuing education requirement for completion of an ISMP Medication Safety Self Assessment.

(B) Proof of completion of an ISMP Medication Safety Self Assessment shall be:

(i) a continuing education certificate provided by an ACPE approved provider for completion of an assessment; or

(ii) a document from ISMP showing completion of an assessment.

(9) Pharmacists shall receive credit for three contact hours (0.3 CEUs) toward their continuing education requirements for taking and successfully passing the initial Geriatric Pharmacy Practice certification examination administered by the Commission for Certification in Geriatric Pharmacy. Proof of successfully passing the examination shall be a certificate issued by the Commission for Certification in Geriatric Pharmacy.

(10) Pharmacist shall receive credit for three contact hours (0.3 CEUs) toward their continuing education requirements for taking and successfully passing an initial Board of Pharmaceutical Specialties certification examination administered by the Board of Pharmaceutical Specialties. Proof of successfully passing the examination shall be a certificate issued by the Board of Pharmaceutical Specialties.

(11) Attendance at programs presented by the Texas State Board of Pharmacy or courses offered by the Texas State Board of Pharmacy as follows:

(A) Pharmacists shall receive credit for the number of hours for the program or course as stated by the Texas State Board of Pharmacy.

(B) Proof of attendance at a program presented by the Texas State Board of Pharmacy or completion of a course offered by the Texas State Board of Pharmacy shall be a certificate issued by the Texas State Board of Pharmacy.

(12) [(40)] Upon demonstrated need the board may establish criteria to approve programs presented by non-ACPE approved providers.

(f) Retention of continuing education records and audit of records by the board.

(1) Retention of records. Pharmacists are required to maintain certificates of completion of approved continuing education for three years from the date of reporting the contact hours on a license renewal application.

(2) Audit of records by the board. The board shall audit the records of pharmacists for verification of reported continuing education credit. The following is applicable for such audits.

(A) Upon written request, a pharmacist shall provide to the board documentation of proof [~~copies of certificates of completion~~] for all continuing education contact hours reported during a specified license period(s). Failure to provide all requested records during the specified time period constitutes prima facie evidence of failure to keep and maintain records and shall subject the pharmacist to disciplinary action by the board.

(B) Credit for continuing education contact hours shall only be allowed for approved programs for which the pharmacist submits documentation of proof [~~copies of certificates of completion~~] reflecting that the hours were completed during the specified license period(s). Any other reported hours shall be disallowed. A pharmacist

who has received credit for continuing education contact hours disallowed during an audit shall be subject to disciplinary action.

(C) A pharmacist who submits false or fraudulent records to the board shall be subject to disciplinary action by the board.

(g) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902105

Gay Dodson, R.Ph.

Executive Director/Secretary

Texas State Board of Pharmacy

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-8028

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## CHAPTER 297. PHARMACY TECHNICIANS AND PHARMACY TECHNICIAN TRAINEES

### 22 TAC §297.4

The Texas State Board of Pharmacy proposes amendments to §297.4 concerning Fees. The proposed amendments to §297.4 will raise pharmacy technician registration fees based on increased expenses.

Gay Dodson, R.Ph., Executive Director/Secretary, has determined that, for the first five-year period the amendments are in effect, there will be fiscal implications for state government as a result of enforcing or administering the amended rule as follows:

Revenue Increase

FY2010 = \$1,013,552

FY2011 = \$1,216,290

FY2012 = \$1,216,290

FY2013 = \$1,216,290

FY2014 = \$1,216,290

There are no anticipated fiscal implications for local government.

Ms. Dodson has determined that, for each year of the first five year period the amendments will be in effect, the public benefit anticipated as a result of enforcing the amended rule will be assuring that the Texas State Board of Pharmacy is adequately funded to carry out its mission. The effect on large, small or micro-businesses (pharmacies) will be the same as the economic cost to an individual, if the pharmacy chooses to pay the individual fee.

Economic cost to persons who are required to comply with the amended rule will be an increase of \$61 for a pharmacy technician trainee registration, an increase of \$112 for an initial pharmacy technician registration and an increase of \$109 for the renewal of a pharmacy technician registration.

Comments on the proposed amendments may be submitted to Allison Benz, R.Ph., M.S., Director of Professional Services, Texas State Board of Pharmacy, 333 Guadalupe Street, Suite 3-600, Austin, Texas 78701, FAX (512) 305-8082. Comments must be received by 5 p.m., July 31, 2009.

The amendments are proposed under §551.002 and §554.051 of the Texas Pharmacy Act (Chapters 551 - 566 and 568 - 569, Texas Occupations Code). The Board interprets §551.002 as authorizing the agency to protect the public through the effective control and regulation of the practice of pharmacy. The Board interprets §554.051(a) as authorizing the agency to adopt rules for the proper administration and enforcement of the Act.

The statutes affected by the amendments: Chapters 551 - 566 and 568 - 569, Texas Occupations Code.

§297.4. Fees.

(a) Pharmacy technician trainee. The fee for registration shall be \$61 and is composed of the following fees: ~~[There shall be no fee for registration as a pharmacy technician trainee.]~~

(1) \$53 for processing the application and issuance of the pharmacy technician trainee registration as authorized by the Act, §568.005;

(2) a \$3 surcharge to fund TexasOnline as authorized by Chapter 2054, Subchapter I, Government Code; and

(3) \$5 surcharge to fund the Office of Patient Protection as authorized by Chapter 101, Subchapter G, Occupations Code.

(b) Pharmacy technician.

(1) Biennial Registration. The board shall require biennial renewal of all pharmacy technician registrations provided under Chapter 568 of the Act.

(2) Initial Registration Fee.

(A) The fee for initial registration shall be \$112 ~~[\$59]~~ for a two year registration and is composed of the following fees:

(i) \$104 ~~[\$51]~~ for processing the application and issuance of the pharmacy technician registration as authorized by the Act, §568.005;

(ii) a \$3 surcharge to fund TexasOnline as authorized by Chapter 2054, Subchapter I, Government Code; and

(iii) \$5 surcharge to fund the Office of Patient Protection as authorized by Chapter 101, Subchapter G, Occupations Code.

(B) The initial registration fee shall be prorated based on the assigned expiration date.

(3) Renewal Fee. The fee for biennial renewal of a pharmacy technician registration shall be \$109 ~~[\$56]~~ and is composed of the following:

(A) \$104 ~~[\$51]~~ for processing the application and issuance of the pharmacy technician registration as authorized by the Act, §568.005;

(B) a \$3 surcharge to fund TexasOnline as authorized by Chapter 2054, Subchapter I, Government Code; and

(C) \$2 surcharge to fund the Office of Patient Protection as authorized by Chapter 101, Subchapter G, Occupations Code.

(c) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

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Gay Dodson, R.Ph.

Executive Director/Secretary

Texas State Board of Pharmacy

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For further information, please call: (512) 305-8028



## CHAPTER 303. DESTRUCTION OF DANGEROUS DRUGS AND CONTROLLED SUBSTANCES

### 22 TAC §303.1, §303.2

The Texas State Board of Pharmacy proposes amendments to §303.1 concerning Destruction of Dispensed Drugs and §303.2 concerning Disposal of Stock Prescription Drugs. The amendments, if adopted, clarify that only dangerous drugs that have been previously dispensed to a patient may be accepted by a pharmacy and destroyed based on DEA requirements and the amendments, if adopted, remove references to tripelethamine which is no longer available.

Gay Dodson, R.Ph., Executive Director/Secretary, has determined that, for the first five-year period the rule is in effect, there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Ms. Dodson has determined that, for each year of the first five-year period the rule will be in effect, the public benefit anticipated as a result of enforcing the rule will be to ensure pharmacists destroy drugs in accordance with federal regulations. There is no fiscal impact for individuals, small or large businesses or to other entities which are required to comply with this section.

Comments on the proposed amendments may be submitted to Allison Benz, R.Ph., M.S., Director of Professional Services, Texas State Board of Pharmacy, 333 Guadalupe Street, Suite 3-600, Austin, Texas 78701, FAX (512) 305-8082. Comments must be received by 5 p.m., July 31, 2009.

The amendments are proposed under §551.002, and §554.051, of the Texas Pharmacy Act (Chapters 551 - 566 and 568 - 569, Texas Occupations Code). The Board interprets §551.002 as authorizing the agency to protect the public through the effective control and regulation of the practice of pharmacy. The Board interprets §554.051(a) as authorizing the agency to adopt rules for the proper administration and enforcement of the Act.

The statutes affected by this rule: Texas Pharmacy Act, Chapters 551 - 566 and 568 - 569, Texas Occupations Code.

#### §303.1. Destruction of Dispensed Drugs.

(a) Drugs dispensed to patients in health care facilities or institutions.

(1) Destruction by the consultant pharmacist. The consultant pharmacist, if in good standing with the Texas State Board of Pharmacy, is authorized to destroy dangerous drugs and controlled substances dispensed to patients in health care facilities or institutions, providing the following conditions are met.

(A) - (D) (No change.)

(E) The actual destruction of the drugs is witnessed by one of the following:

(i) a commissioned peace officer;

(ii) an agent of the Texas State Board of Pharmacy;

(iii) an agent of the Texas Health and Human Services Commission [Department of Human Services], authorized by the Texas State Board of Pharmacy to destroy drugs;

(iv) an agent of the Texas Department of State Health Services [Health], authorized by the Texas State Board of Pharmacy to destroy drugs; or

(v) any two individuals working in the following capacities at the facility:

- (I) facility administrator;
- (II) director of nursing;
- (III) acting director of nursing; or
- (IV) licensed nurse.

(F) (No change.)

(2) - (3) (No change.)

(b) Dangerous drugs returned to a pharmacy. A pharmacist may accept and destroy dangerous drugs that have been previously dispensed to a patient and returned to a pharmacy by the patient or an agent of the patient. However, a pharmacist may not accept controlled substance that have been previously dispensed to a patient. The following procedures shall be followed in destroying dangerous drugs.

(1) The dangerous drugs shall be destroyed in a manner to render the drugs unfit for human consumption and disposed of in compliance with all applicable state and federal requirements.

(2) Documentation shall be maintained that includes the following information:

(A) name and address of the dispensing pharmacy;

(B) unique identification number assigned to the prescription, if available;

(C) name and strength of the dangerous drug; and

(D) signature of the pharmacist.

~~[(b) Drugs returned to a pharmacy. A pharmacist, licensed by the board, is authorized to destroy dangerous drugs and controlled substances which have been previously dispensed to a patient and returned to a pharmacy by the patient or an agent of the patient. The following procedures shall be followed in destroying these drugs.]~~

~~[(1) Dangerous drugs other than tripeleminamine (e.g., PBZ), nalbuphine (e.g., Nubain), and carisoprodol (e.g., Soma).]~~

~~[(A) The dangerous drugs shall be destroyed in a manner to render the drugs unfit for human consumption and disposed of in compliance with all applicable state and federal requirements.]~~

~~[(B) Documentation shall be maintained which includes the following information:]~~

~~[(i) name and address of the dispensing pharmacy;]~~

~~[(ii) unique identification number assigned to the prescription, if available;]~~

~~[(iii) name and strength of the dangerous drug; and]~~

~~[(iv) signature of the pharmacist.]~~

~~[(2) Controlled substances and tripeleminamine (e.g., PBZ), nalbuphine (e.g., Nubain), and carisoprodol (e.g., Soma).]~~

~~[(A) Controlled substances and tripeleminamine (PBZ), nalbuphine (Nubain), and carisoprodol (e.g., Soma) shall be destroyed~~

~~in a manner to render the drugs unfit for human consumption and disposed of in compliance with all applicable state and federal requirements.]~~

~~[(B) The destruction shall be witnessed by one of the following individuals: ]~~

~~[(i) the patient or patient's agent;]~~

~~[(ii) another licensed pharmacist;]~~

~~[(iii) a commissioned peace officer; or]~~

~~[(iv) an agent of the Texas State Board of Pharmacy, Texas Department of Public Safety, or Drug Enforcement Agency.]~~

~~[(C) Documentation shall be maintained which includes the following information:]~~

~~[(i) date of destruction;]~~

~~[(ii) name and address of the dispensing pharmacy;]~~

~~[(iii) unique identification number assigned to the prescription if available;]~~

~~[(iv) name of the patient;]~~

~~[(v) name, strength, and quantity of the drug; and]~~

~~[(vi) signature of the pharmacist who destroyed the drugs and signature of the witness to the destruction.]~~

*§303.2. Disposal of Stock Prescription Drugs.*

(a) (No change.)

(b) Disposal of stock dangerous drugs. A pharmacist, licensed by the board, is authorized to destroy stock dangerous drugs owned by a licensed pharmacy if such dangerous drugs are destroyed in a manner to render the drugs unfit for human consumption and disposed of in compliance with all applicable state and federal requirements. However, the following procedures shall be followed in destroying any brand or dosage form of [tripeleminamine (e.g., PBZ), nalbuphine (e.g., Nubain), and carisoprodol (e.g., Soma):

(1) the dangerous drugs are inventoried; and

(2) the destruction is witnessed by another licensed pharmacist or a commissioned peace officer.

(c) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

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Gay Dodson, R.Ph.

Executive Director/Secretary

Texas State Board of Pharmacy

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For further information, please call: (512) 305-8028

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## PART 22. TEXAS STATE BOARD OF PUBLIC ACCOUNTANCY

### CHAPTER 511. ELIGIBILITY



## SUBCHAPTER C. EDUCATIONAL REQUIREMENTS

### 22 TAC §511.58

The Texas State Board of Public Accountancy (Board) proposes an amendment to §511.58, concerning Definitions of Related Business Subjects.

The amendment to §511.58 attempts to insure that individuals teaching college level ethics courses not have a history of having been disciplined by the Board or other state or federal licensing agencies.

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment will be in effect:

A. the additional estimated cost to the state expected as a result of enforcing or administering the amendment will be none.

B. the estimated reduction in costs to the state and to local governments as a result of enforcing or administering the amendment will be none.

C. the estimated loss or increase in revenue to the state as a result of enforcing or administering the amendment will be none.

Mr. Treacy has determined that for the first five-year period the amendment is in effect the public benefit expected as a result of adoption of the proposed amendment will be a licensee better educated in ethics which will inure to the benefit of the public.

The probable economic cost to persons required to comply with the amendment will be insignificant.

Mr. Treacy has determined that a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Mr. Treacy has determined that the proposed amendment will not have a significant adverse economic effect on small businesses because the amendment is not expected to affect a significant number of small businesses.

Mr. Treacy has determined that an Economic Impact Statement and a Regulatory Flexibility Analysis are not required because the proposed amendment will not adversely affect small or micro businesses.

The Board requests comments on the substance and effect of the proposed rule from any interested person. Comments must be received at the Board no later than noon on July 12, 2009. Comments should be addressed to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 333 Guadalupe, Tower 3, Suite 900, Austin, Texas 78701 or faxed to his attention at (512) 305-7854.

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; 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).

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.*

(a) An individual who holds a baccalaureate degree from a recognized educational institution as defined by board rule, §511.52 of this title (relating to Recognized Colleges and Universities) may take related business courses offered at an accredited community college, provided they are recognized as upper level courses for a 4-year BBA degree from an institution recognized by the board.

(b) The board will accept not 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. Not more than 6 credit semester hours taken in any subject area 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) finance;
- (8) information systems or technology; and
- (9) other areas related to accounting.

(c) In addition to the 24 hours required in subsection (b) of this section, the board requires that 3 passing semester hours be earned as a result of taking a course in ethics. The course must be taken at a recognized educational institution and should provide students with a framework of ethical reasoning, professional values and attitudes for exercising professional skepticism and other behavior that is in the best interest of the public and profession. The ethics program should provide a foundation for ethical reasoning and include the core values of integrity, objectivity and independence taught by an instructor who has not been disciplined by the board for a violation of the board's rules of professional conduct unless waived by the board.

(d) The board requires that a minimum of 2 semester credit hours in accounting communications or business communications be completed. The semester hours may be obtained through a discrete 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.

(e) Credit for hours taken at recognized colleges and universities using the quarter system shall be counted as 2/3 of a semester hour for each hour of credit received under the quarter system.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 28, 2009.

TRD-200902063

J. Randel (Jerry) Hill

General Counsel

Texas State Board of Public Accountancy

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For further information, please call: (512) 305-7842



## CHAPTER 523. CONTINUING PROFESSIONAL EDUCATION

### SUBCHAPTER B. CONTINUING PROFESSIONAL EDUCATION RULES FOR INDIVIDUALS

#### 22 TAC §523.120

The Texas State Board of Public Accountancy (Board) proposes an amendment to §523.120, concerning Standards for CPE Reporting.

The amendment to §523.120 will modify the rule to reflect that the certificate is evidence of the completion of the course.

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment will be in effect:

A. the additional estimated cost to the state expected as a result of enforcing or administering the amendment will be none.

B. the estimated reduction in costs to the state and to local governments as a result of enforcing or administering the amendment will be none.

C. the estimated loss or increase in revenue to the state as a result of enforcing or administering the amendment will be none.

Mr. Treacy has determined that for the first five-year period the amendment is in effect the public benefits expected as a result of adoption of the proposed amendment will be a better understanding of what constitutes evidence of course completion.

The probable economic cost to persons required to comply with the amendment will be none.

Mr. Treacy has determined that a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Mr. Treacy has determined that the proposed amendment will not have an adverse economic effect on small businesses because the amendment does not impose any duties or obligations upon small businesses.

Mr. Treacy has determined that an Economic Impact Statement and a Regulatory Flexibility Analysis are not required because the proposed amendment will not adversely affect small or micro businesses.

The Board requests comments on the substance and effect of the proposed rule from any interested person. Comments must be received at the Board no later than noon on July 12, 2009.

Comments should be addressed to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 333 Guadalupe, Tower 3, Suite 900, Austin, Texas 78701 or faxed to his attention at (512) 305-7854.

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; 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).

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.

§523.120. *Standards for CPE Reporting.*

(a) Participants in group or self-study programs must document their participation, including:

- (1) sponsor name and identification number;
- (2) title or description of content, or both;
- (3) date(s);
- (4) location; and
- (5) number of credit hours.

(b) These standards are designed to encourage participants to document their attendance at group programs or participation in self-study programs. Evidence of completion is ~~would normally be~~ the certificate supplied by the sponsor. Documentation ~~by the licensee~~ must be retained by the licensee for the three most recent full reporting periods.

(c) Credit hours earned from sources other than registered sponsors, or membership on designated committees should be claimed at the time the license renewal is submitted on the appropriate form "Claiming Credit from a Non-Registered Sponsor" justifying the reason the CPE credit hours are being claimed.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the 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



## SUBCHAPTER C. ETHICS RULES: INDIVIDUALS AND SPONSORS

### 22 TAC §523.132

The Texas State Board of Public Accountancy (Board) proposes an amendment to §523.132, concerning Board Contracted Ethics Instructors.

The amendment to §523.132 will permit someone disciplined by the board to teach ethics courses upon requesting and receiving a waiver from the limitation.

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment will be in effect:

A. the additional estimated cost to the state expected as a result of enforcing or administering the amendment will be none.

B. the estimated reduction in costs to the state and to local governments as a result of enforcing or administering the amendment will be none.

C. the estimated loss or increase in revenue to the state as a result of enforcing or administering the amendment will be none.

Mr. Treacy has determined that for the first five-year period the amendment is in effect the public benefits expected as a result of adoption of the proposed amendment will be a better protected public by permitting qualified instructors to educate licensees in ethics.

The probable economic cost to persons required to comply with the amendment will be insignificant.

Mr. Treacy has determined that a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Mr. Treacy has determined that the proposed amendment will not have an adverse economic effect on small businesses because the amendment does not impose any duties or obligations upon small businesses.

Mr. Treacy has determined that an Economic Impact Statement and a Regulatory Flexibility Analysis are not required because the proposed amendment will not adversely affect small or micro businesses.

The Board requests comments on the substance and effect of the proposed rule from any interested person. Comments must be received at the Board no later than noon on July 12, 2009. Comments should be addressed to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 333 Guadalupe, Tower 3, Suite 900, Austin, Texas 78701 or faxed to his attention at (512) 305-7854.

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; 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).

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.

#### §523.132. *Board Contracted Ethics Instructors.*

(a) The board may contract with any instructor wishing to offer an ethics course approved by the board pursuant to §523.131 of this title (relating to Board Approval of Ethics Course Content) who can demonstrate that:

(1) the instructor is a certified public accountant licensed in Texas or that the instructor is team teaching with a certified public accountant licensed in Texas and has completed the board's ethics training program as required by the board;

(2) the instructor has never been disciplined for a violation of the board's Rules of Professional Conduct unless waived by the board; and

(3) the instructor is qualified to teach ethical reasoning because he has:

(A) experience in the study and teaching of ethical reasoning; and

(B) formal training in organizational or ethical behavior instruction.

(b) An instructor demonstrates that he is qualified to teach ethical reasoning upon proof that he has:

(1) at the time of application obtained education in ethics substantially equivalent to a minimum of 6 hours of credit from an accredited University, College or Community College, of which at least three hours must be in organizational ethics;

(2) teaching experience that is substantially equivalent to two or more full time semesters teaching experience at an accredited University, College or Community College;

(3) spent at least ten years performing accountancy related activities as a licensed CPA;

(4) no record of discipline for violation of the rules of professional conduct of the American Institute of Certified Public Accountants, the Texas Society of Certified Public Accountants or other national or state accountancy organization recognized by the board; and

(5) goals and interests consistent with the board's purpose of protecting the public interest pursuant to the provisions of the Act.

(c) The board may refuse to contract, refuse to renew a contract or cancel the contract of any instructor who has engaged in conduct rendering that instructor unsuitable for teaching ethics.

(d) An instructor must submit a current resume with the contract.

(e) Interpretive comments: To have goals and interests consistent with the board's purpose of protecting the public interest pursuant to the provisions of the Public Accountancy Act an instructor must refrain from using the instruction of an ethics course as a marketing tool for other products and services offered by the instructor. An instructor must be free from conflicts of interest with the board in both fact and

appearance. Representation of a respondent or a complainant in a disciplinary proceeding pending before the board creates the appearance of a conflict of interest.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 28, 2009.

TRD-200902067

J. Randel (Jerry) Hill

General Counsel

Texas State Board of Public Accountancy

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-7842



## SUBCHAPTER D. STANDARDS FOR CONTINUING PROFESSIONAL EDUCATION PROGRAMS AND RULES FOR SPONSORS

### 22 TAC §523.143

The Texas State Board of Public Accountancy (Board) proposes an amendment to §523.143, concerning Sponsor's Record.

The amendment to §523.143 will require the sponsor of a continuing professional education program to provide and retain notice of the course and its promotional materials.

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment will be in effect:

A. the additional estimated cost to the state expected as a result of enforcing or administering the amendment will be none.

B. the estimated reduction in costs to the state and to local governments as a result of enforcing or administering the amendment will be none.

C. the estimated loss or increase in revenue to the state as a result of enforcing or administering the amendment will be none.

Mr. Treacy has determined that for the first five-year period the amendment is in effect the public benefits expected as a result of adoption of the proposed amendment will be to assure that the courses offered to the public will be clearly identified prior to enrollment.

The probable economic cost to persons required to comply with the amendment will be insignificant.

Mr. Treacy has determined that a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Mr. Treacy has determined that the proposed amendment will not have an adverse economic effect on small businesses because the amendment does not impose any duties or obligations upon small businesses.

Mr. Treacy has determined that an Economic Impact Statement and a Regulatory Flexibility Analysis are not required because the proposed amendment will not adversely affect small or micro businesses.

The Board requests comments on the substance and effect of the proposed rule from any interested person. Comments must

be received at the Board no later than noon on July 12, 2009. Comments should be addressed to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 333 Guadalupe, Tower 3, Suite 900, Austin, Texas 78701 or faxed to his attention at (512) 305-7854.

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; 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).

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.

#### §523.143. *Sponsor's Record.*

(a) In order to support the reports required of participants, the sponsor of group or self-study programs must retain the following records:

(1) record of participation, e.g., sign-in sheet reflecting the credit hours earned by each participant including those who arrive late or leave early;

(2) course program including recommended credit hours as required by §523.140(b) of this title (relating to Program Standards);

(3) documentation [advance notification] as required by §523.140(a) of this title including all [and] promotional materials[; if any];

(4) date(s);

(5) location;

(6) instructor(s), including resume or biography; and

~~{(7) number of credit hours; and}~~

(7) ~~{(8)}~~ evaluation of program as directed in §523.141(b) of this title (relating to Evaluation).

(b) Documentation must be retained for three years from the date the program is completed. [To satisfy the detailed requirements of all jurisdictions, a retention period of three years from the date the program is completed is appropriate. The record of attendance should reflect the credit hours earned by each participant, including those who arrive late or leave early.]

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

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TRD-200902065

J. Randel (Jerry) Hill  
General Counsel  
Texas State Board of Public Accountancy  
Earliest possible date of adoption: July 12, 2009  
For further information, please call: (512) 305-7842

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**CHAPTER 527. PEER REVIEW**

**22 TAC §527.10**

The Texas State Board of Public Accountancy (Board) proposes an amendment to §527.10, concerning Peer Review Report Committee.

The amendment to §527.10 will update the rule to reflect the new pass rating for firms.

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment will be in effect:

A. the additional estimated cost to the state expected as a result of enforcing or administering the amendment will be none.

B. the estimated reduction in costs to the state and to local governments as a result of enforcing or administering the amendment will be none.

C. the estimated loss or increase in revenue to the state as a result of enforcing or administering the amendment will be none.

Mr. Treacy has determined that for the first five-year period the amendment is in effect the public benefits expected as a result of adoption of the proposed amendment will be an understanding of an acceptable Peer Review rating.

The probable economic cost to persons required to comply with the amendment will be insignificant.

Mr. Treacy has determined that a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Mr. Treacy has determined that the proposed amendment will not have an adverse economic effect on small businesses because the amendment does not impose any duties or obligations upon small businesses.

Mr. Treacy has determined that an Economic Impact Statement and a Regulatory Flexibility Analysis are not required because the proposed amendment will not adversely affect small or micro businesses.

The Board requests comments on the substance and effect of the proposed rule from any interested person. Comments must be received at the Board no later than noon on July 12, 2009. Comments should be addressed to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 333 Guadalupe, Tower 3, Suite 900, Austin, Texas 78701 or faxed to his attention at (512) 305-7854.

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; 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).

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.

*§527.10. Peer Review Report Committee.*

A peer review report committee (PRRC) is comprised of CPAs practicing public accountancy and formed by a sponsoring organization for the purpose of accepting peer review reports submitted by firms on peer review engagements.

(1) Each member of a PRRC must be active in the practice of public accountancy at a supervisory level in the accounting or auditing function while serving on the committee. The member's firm must be enrolled in an approved practice-monitoring program and have received a report with a rating of pass or an unmodified report on its most recently completed peer review. A majority of the committee members must satisfy the qualifications required of system peer review team captains as established and reported in the AICPA Standards for Performing and Reporting on Peer Reviews.

(2) Each member of a PRRC must be approved for appointment by the governing body of the sponsoring organization.

(3) In determining the size of a PRRC, the requirement for broad industry experience, and the likelihood of some members needing to recuse themselves during the consideration of some reviews as a result of the members' close association to the firm or because they performed the review, shall be considered.

(4) No more than one PRRC member may be from the same firm.

(5) The PRRC members' terms shall be staggered to provide for continuity.

(6) A PRRC member may not concurrently serve as:  
(A) a member of any state's board of accountancy; or  
(B) a member of any state's CPA society's ethics committee.

(7) A PRRC member may not participate in any discussion or have any vote with respect to a reviewed firm when the committee member lacks independence as defined in §501.70 of this title (relating to Independence) or has a conflict of interest. Examples of conflicts of interest include, but are not limited to:

(A) the member's firm has performed the most recent peer review of the reviewed firm's accounting and auditing practice;

(B) the member served on the review team, which performed the current or the immediately preceding review of the enrolled firm; or

(C) the member believes he cannot be impartial or objective.

(8) Each PRRC member must comply with the confidentiality requirements of §901.161 of the Act. The sponsoring organization may annually require its PRRC members to sign a statement

acknowledging their appointments and the responsibilities and obligations of their appointments.

(9) A PRRC decision to accept a report must be made by not fewer than three members who satisfy the above criteria.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 28, 2009.

TRD-200902066

J. Randel (Jerry) Hill

General Counsel

Texas State Board of Public Accountancy

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-7842



## PART 39. TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS

### CHAPTER 851. TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS LICENSING RULES

#### SUBCHAPTER A. LICENSING

##### 22 TAC §851.30

The Texas Board of Professional Geoscientists (TBPG or Board) proposes an amendment to 22 TAC §851.30, regarding firm registration. The proposed amendment cleans up wording related to firm registration; clarifies exemptions for engineering firms; and allows the Board to issue certificates of registration on a non-annual basis. The proposed amendment also exempts from registration an engineering firm that performs service or work that is both engineering and geoscience as long as the geoscience work performed is incidental and specific to their work as an engineering firm.

Mr. Charles Horton, Interim Executive Director of TBPG, has determined that for the first five-year period the section is in effect there will be little or no fiscal impact for state or local government as a result of enforcing or administering the section.

Mr. Horton 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 enforcing the section will be enhancement of the professional practice of geoscientists by clarifying the requirements for registration as a Geoscience Firm. There will be little or no effect on small businesses. There will be no anticipated economic cost to persons who are required to comply with the proposed section.

Comments on this proposal may be submitted in writing to: Molly B. Roman, Administrative Coordinator, TBPG, P.O. Box 13225, Austin, Texas 78711, (512) 936-4405. Comments may also be submitted electronically to [mroman@tbp.state.tx.us](mailto:mroman@tbp.state.tx.us) or faxed to (512) 936-4409. Comments must be submitted no later than 30 days from the date the proposed amendments are posted in the *Texas Register*. All requests for a public hearing on the proposed section submitted under the Administrative Procedure Act must be received by Ms. Roman no more than 15 calendar

days after notice of proposed amendments to this section have been published in the *Texas Register*.

This amendment is proposed under the Texas Occupations Code §1002.151, which authorizes the Board to adopt and enforce rules consistent with the Texas Geoscience Practice Act and necessary for the performance of its duties, and §1002.351, which authorizes the Board to regulate the public practice of geoscience by firms and corporations.

The proposed amendment implements the Texas Occupations Code, §1002.151 and §1002.351.

##### §851.30. Firm Registration.

(a) The Texas Board of Professional Geoscientists will ~~shall~~ receive, evaluate, and process all applications for a certificate of registration issued under the authority of the Texas Geoscience Practice Act (Act). Unless an exemption applies, as outlined in §1002.252, registration as a Geoscience Firm is required from all firms offering to engage or engaging in the public practice of professional geoscience in Texas. ~~Applications for the certificate of registration shall be accepted and will be mandatory from all firms offering to engage or engaging in the practice of professional geoscience for the public in Texas that do not meet any exemptions in §1002.252.~~ As provided in §851.10(11), the term firm includes corporations, sole-proprietorships, partnerships and/or joint stock associations. For the purposes of this section, the term public includes but is not limited to political subdivisions of the state, business entities, and individuals. The Board has the authority under the Act to issue a ~~an annual~~ certificate of registration to applicants that, subsequent to review and evaluation, are found to have met all requirements of the Act and Board rules. The Board has the authority under the Act to deny a certificate of registration to any applicant found not to have met all requirements of the Act and Board rules. This section does not apply to an engineering firm that performs service or work that is both engineering and geoscience if the geoscience work performed is incidental and specific to their work as an engineering firm.

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

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 26, 2009.

TRD-200902026

Charles Horton

Interim Executive Director

Texas Board of Professional Geoscientists

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 936-4405



## TITLE 31. NATURAL RESOURCES AND CONSERVATION

### PART 17. TEXAS STATE SOIL AND WATER CONSERVATION BOARD

#### CHAPTER 517. FINANCIAL ASSISTANCE

##### SUBCHAPTER A. CONSERVATION ASSISTANCE

##### 31 TAC §517.10

The Texas State Soil and Water Conservation Board (State Board) proposes an amendment to §517.10, concerning extending the deadline when soil and water conservation districts (districts) must have all claims for Conservation Assistance Funds (Matching Funds) in the state office. Specifically, this proposed amendment changes the deadline from August 1st to August 31st to provide districts more consistency with end-of-year reporting requirements and more time to earn/raise matching contributions.

Mr. Kenny Zajicek, Fiscal Officer, State Board, has determined that for the first five-year period there will be no fiscal implications for state or local government as a result of administering this amended rule.

Mr. Zajicek has also determined that for the first five-year period this amended rule is in effect, the public benefit anticipated as a result of administering this rule will be the possibility of improved district operations and financial planning.

There are no anticipated costs to small businesses or individuals resulting from this amended rule.

Comments on the proposed amendment may be submitted in writing to Rex Isom, Executive Director, Texas State Soil and Water Conservation Board, P.O. Box 658, Temple, Texas 76503, (254) 773-2250 ext. 231.

The amendment is proposed under Agriculture Code, Title 7, Chapter 201, §201.020, which authorizes the State Board to adopt rules that are necessary for the performance of its functions under the Agriculture Code.

No other statutes, articles, or codes are affected by this amendment.

*§517.10. Deadlines.*

(a) The state board hereby establishes the following deadlines.

(1) By May 15, districts must have claimed 2/3 of their original annual allocation of conservation funds.

(2) By August 31 [+], districts must have all claims for conservation assistance funds in the state office at Temple.

(b) Exceptions to these deadlines can only be made by the state board or the executive director with permission of the state board on a case-by-case basis.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902092

Mel Davis

Special Projects Coordinator

Texas State Soil and Water Conservation Board

Earliest possible date of adoption: July 12, 2009

For further information, please call: (254) 773-2250 x252



**TITLE 40. SOCIAL SERVICES AND ASSISTANCE**

**PART 12. TEXAS BOARD OF OCCUPATIONAL THERAPY EXAMINERS**

**CHAPTER 364. REQUIREMENTS FOR LICENSURE**

**40 TAC §364.1**

The Texas Board of Occupational Therapy Examiners proposes an amendment to §364.1, concerning Requirements for Licensure. The amendment will restore the use of occupational therapist (OT) and occupational therapy assistant (OTA) as consistent with the Occupational Therapy Practice Act.

John P. Maline, Executive Director of the Executive Council of Physical Therapy and Occupational Therapy Examiners, has determined that for the first five-year period the rule is in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Mr. Maline also has determined that for each year of the first five years the rule is in effect the public benefit anticipated as a result of enforcing the rule will be clarification of terms used in the OT rules. There will be no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the rule as proposed.

Comments on the proposed amendment may be submitted to Augusta Gelfand, OT Coordinator, Texas Board of Occupational Therapy Examiners, 333 Guadalupe Street, Suite 2-510, Austin, Texas 78701, (512) 305-6900, or electronically to [augusta.gelfand@mail.capnet.state.tx.us](mailto:augusta.gelfand@mail.capnet.state.tx.us).

The amendment is proposed under the Occupational Therapy Practice Act (Act), Title 3, Subtitle H, Chapter 454 of the Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority to adopt rules consistent with this Act to carry out its duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

*§364.1. Requirements for Licensure.*

(a) (No change.)

(b) If the applicant has not passed the national licensure examination, the applicant must also meet the requirement in §364.2 of this title (relating to Initial License by Examination).

(c) If the applicant is licensed as an occupational therapist or occupational therapy assistant [OTR or COTA] in another state, jurisdiction of the U.S., or U.S. [US] military, the applicant must also meet the requirements as stated in §364.4 of this title (relating to Licensure by Endorsement).

(d) - (j) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902135

John P. Maline  
Executive Director, Executive Council of Physical Therapy and  
Occupational Therapy Examiners  
Texas Board of Occupational Therapy Examiners  
Earliest possible date of adoption: July 12, 2009  
For further information, please call: (512) 305-6900



#### 40 TAC §364.3

The Texas Board of Occupational Therapy Examiners proposes an amendment to §364.3, concerning Temporary License. The amendment will restore the use of occupational therapist (OT) and occupational therapy assistant (OTA) as consistent with the Occupational Therapy Practice Act.

John P. Maline, Executive Director of the Executive Council of Physical Therapy and Occupational Therapy Examiners, has determined that for the first five-year period the rule is in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Mr. Maline also has determined that for each year of the first five years the rule is in effect the public benefit anticipated as a result of enforcing the rule will be clarification of terms used in the OT rules. There will be no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the rule as proposed.

Comments on the proposed amendment may be submitted to Augusta Gelfand, OT Coordinator, Texas Board of Occupational Therapy Examiners, 333 Guadalupe Street, Suite 2-510, Austin, Texas 78701, (512) 305-6900, or electronically to [augusta.gelfand@mail.capnet.state.tx.us](mailto:augusta.gelfand@mail.capnet.state.tx.us).

The amendment is proposed under the Occupational Therapy Practice Act (Act), Title 3, Subtitle H, Chapter 454 of the Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority to adopt rules consistent with this Act to carry out its duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

##### §364.3. *Temporary License.*

(a) The Board will issue a temporary license to an applicant who is taking the exam for the first time.

(b) Temporary Licensure is not available to applicants who have received a license in another state, U.S. [US] Territory or another country as an occupational therapy practitioner, unless they were licensed as a certified occupational therapy assistant (COTA) or an occupational therapy assistant (OTA), and now meet the requirements for a temporary license as an OT.

(c) - (f) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.  
TRD-200902136

John P. Maline  
Executive Director, Executive Council of Physical Therapy and  
Occupational Therapy Examiners  
Texas Board of Occupational Therapy Examiners  
Earliest possible date of adoption: July 12, 2009  
For further information, please call: (512) 305-6900



#### CHAPTER 369. DISPLAY OF LICENSES

##### 40 TAC §369.3

The Texas Board of Occupational Therapy Examiners proposes an amendment to §369.3, concerning Use of Titles. The amendment will restore the use of occupational therapist (OT) and occupational therapy assistant (OTA) as consistent with the Occupational Therapy Practice Act.

John P. Maline, Executive Director of the Executive Council of Physical Therapy and Occupational Therapy Examiners, has determined that for the first five-year period the rule is in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Mr. Maline also has determined that for each year of the first five years the rule is in effect the public benefit anticipated as a result of enforcing the rule will be clarification of terms used in the OT rules. There will be no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the rule as proposed.

Comments on the proposed amendment may be submitted to Augusta Gelfand, OT Coordinator, Texas Board of Occupational Therapy Examiners, 333 Guadalupe Street, Suite 2-510, Austin, Texas 78701, (512) 305-6900, or electronically to [augusta.gelfand@mail.capnet.state.tx.us](mailto:augusta.gelfand@mail.capnet.state.tx.us).

The amendment is proposed under the Occupational Therapy Practice Act (Act), Title 3, Subtitle H, Chapter 454 of the Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority to adopt rules consistent with this Act to carry out its duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

##### §369.3. *Use of Titles.*

(a) Temporary Licensees.

(1) An [Only an] occupational therapist with a temporary license may use the title "Occupational Therapist" and the initials "OT."

(2) An [Only an] occupational therapy assistant with a temporary license may use the title "Occupational Therapy Assistant" and the initials "OTA."

(b) Regular and Provisional Licensees.

(1) An [Only an] occupational therapist with a regular or provisional license may use the title "[Licensed] Occupational Therapist" or "Occupational Therapist, Registered" and the initials "OT" ["LOT"] or "OTR."

(2) An [Only an] occupational therapy assistant with a regular or provisional license may use the title "[Licensed] Occupational Therapy Assistant" or "Certified Occupational Therapy Assistant" and the initials "OTA" ["LOTA"] or "COTA."

(c) (No change.)



This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902137

John P. Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-6900



## CHAPTER 371. INACTIVE AND RETIRED STATUS

### 40 TAC §371.2

The Texas Board of Occupational Therapy Examiners proposes an amendment to §371.2, concerning Retired Status. The amendment will restore the use of occupational therapist (OT) and occupational therapy assistant (OTA) as consistent with the Occupational Therapy Practice Act.

John P. Maline, Executive Director of the Executive Council of Physical Therapy and Occupational Therapy Examiners, has determined that for the first five-year period the rule is in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Mr. Maline also has determined that for each year of the first five years the rule is in effect the public benefit anticipated as a result of enforcing the rule will be clarification of terms used in the OT rules. There will be no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the rule as proposed.

Comments on the proposed amendment may be submitted to Augusta Gelfand, OT Coordinator, Texas Board of Occupational Therapy Examiners, 333 Guadalupe Street, Suite 2-510, Austin, Texas 78701, (512) 305-6900, or electronically to [augusta.gelfand@mail.capnet.state.tx.us](mailto:augusta.gelfand@mail.capnet.state.tx.us).

The amendment is proposed under the Occupational Therapy Practice Act (Act), Title 3, Subtitle H, Chapter 454 of the Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority to adopt rules consistent with this Act to carry out its duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

#### §371.2. *Retired Status.*

(a) The Retired Status is available for an occupational therapy practitioner whose only practice is the provision of voluntary charity care without monetary compensation.

(1) "voluntary charity care" means occupational therapy services provided as a volunteer with no compensation, for a charitable organization as defined in [Section] §84.003 of the Texas Civil Practice and Remedies Code. This includes any bona fide [fide] charitable, religious, prevention of cruelty to children or animals, youth sports and youth recreational, neighborhood crime prevention or patrol, or educational organization (excluding fraternities, sororities, and secret societies), or other organization organized and operated exclusively for the promotion of social welfare by being primarily engaged in

promoting the common good and general welfare of the people in the community, including these type of organizations with a Section 501(c)(3) or (4) exemption from federal income tax, some Chambers of commerce, and volunteer centers certified by the Department of Public Safety.

(2) "compensation" means direct or indirect payment of anything of monetary value.

(3) The designation used by the retired status licensee is Occupational Therapist Registered, Retired (OTR, Ret) or [Licensed] Occupational Therapist, Retired [OT [LOF], Ret), or Certified Occupational Therapy Assistant, Retired (COTA, Ret) or [Licensed] Occupational Therapy Assistant, Retired (OTA [LOTA], Ret).

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

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902138

John P. Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-6900



## CHAPTER 372. PROVISION OF SERVICES

### 40 TAC §372.1

The Texas Board of Occupational Therapy Examiners proposes an amendment to §372.1, concerning Provision of Services. The amendment will restore the use of occupational therapist (OT) and occupational therapy assistant (OTA) as consistent with the Occupational Therapy Practice Act.

John P. Maline, Executive Director of the Executive Council of Physical Therapy and Occupational Therapy Examiners, has determined that for the first five-year period the rule is in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Mr. Maline also has determined that for each year of the first five years the rule is in effect the public benefit anticipated as a result of enforcing the rule will be clarification of terms used in the OT rules. There will be no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the rule as proposed.

Comments on the proposed amendment may be submitted to Augusta Gelfand, OT Coordinator, Texas Board of Occupational Therapy Examiners, 333 Guadalupe Street, Suite 2-510, Austin, Texas 78701, (512) 305-6900, or electronically to [augusta.gelfand@mail.capnet.state.tx.us](mailto:augusta.gelfand@mail.capnet.state.tx.us).

The amendment is proposed under the Occupational Therapy Practice Act (Act), Title 3, Subtitle H, Chapter 454 of the Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority to adopt rules consistent with this Act to carry out its duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

§372.1. *Provision of Services.*

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

(d) Evaluation.

(1) Only an occupational therapist [~~OTR~~ or ~~LOF~~] may perform the evaluation.

(2) (No change.)

(3) The occupational therapist [~~OTR~~ or ~~LOF~~] must have face-to-face, real time interaction with the patient or client during the evaluation process.

(4) The occupational therapist [~~OTR~~ or ~~LOF~~] may delegate to an occupational therapy assistant [~~a COTA, LOTA~~] or temporary licensee the collection of data for the assessment. The occupational therapist [~~OTR~~ or ~~LOF~~] is responsible for the accuracy of the data collected by the assistant.

(e) Plan of Care.

(1) Only an occupational therapist [~~OTR, LOF~~ or ~~OT~~] may initiate, develop, modify or complete an occupational therapy plan of care. It is a violation of the OT Practice Act for an occupational therapy assistant [~~a COTA/LOTA~~] to dictate, or attempt to dictate, when occupational therapy services should or should not be provided, the nature and frequency of services that are provided, when the patient should be discharged, or any other aspect of the provision of occupational therapy as set out in the OT Act and Rules.

(2) The occupational therapist [~~OTR, LOF~~ or ~~OT~~] and an occupational therapy assistant [~~COTA, LOTA~~ or ~~OTA~~] may work jointly to revise the short-term goals, but the final determination resides with the occupational therapist [~~OTR~~ or ~~LOF~~]. Revisions to the plan of care and goals must be documented by the occupational therapist [~~OTR/LOF~~] and/or occupational therapy assistant [~~COTA/LOTA~~] to reflect revisions at the time of the change.

(3) - (5) (No change.)

(6) The occupational therapist [~~OTR~~ or ~~LOF~~] is responsible for determining whether intervention is needed and if a referral is required for occupational therapy intervention.

(7) (No change.)

(8) Except where otherwise restricted by rule, the supervising occupational therapist [~~OTR~~ or ~~LOF~~] may only delegate to an occupational therapy assistant [~~a COTA, LOTA~~] or temporary licensee tasks that they both agree are within the competency level of that occupational therapy assistant [~~COTA, LOTA~~] or temporary licensee.

(9) The occupational therapy assistant [~~COTA~~ or ~~LOTA~~] must include the name of his or her supervising occupational therapist [~~OTR~~ or ~~LOF~~] in each treatment note. If there is not a current supervising occupational therapist [~~OTR~~ or ~~LOF~~], the occupational therapy assistant [~~COTA~~ or ~~LOTA~~] cannot treat.

(f) Discharge.

(1) Only an occupational therapist [~~OTR~~ or ~~LOF~~] has the authority to discharge patients from occupational therapy services. The discharge is based on whether the patient or client has achieved pre-determined goals, has achieved maximum benefit from occupational therapy services; or when other circumstances warrant discontinuation of occupational therapy services.

(2) The occupational therapist [~~OTR~~ or ~~LOF~~] is responsible for the content and validity of the discharge summary and must sign the discharge summary.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902139

John P. Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-6900



## CHAPTER 373. SUPERVISION

### 40 TAC §373.1

The Texas Board of Occupational Therapy Examiners proposes an amendment to §373.1, concerning Supervision of Non-Licensed Personnel. The amendment will restore the use of occupational therapist (OT) and occupational therapy assistant (OTA) as consistent with the Occupational Therapy Practice Act.

John P. Maline, Executive Director of the Executive Council of Physical Therapy and Occupational Therapy Examiners, has determined that for the first five-year period the rule is in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Mr. Maline also has determined that for each year of the first five years the rule is in effect the public benefit anticipated as a result of enforcing the rule will be clarification of terms used in the OT rules. There will be no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the rule as proposed.

Comments on the proposed amendment may be submitted to Augusta Gelfand, OT Coordinator, Texas Board of Occupational Therapy Examiners, 333 Guadalupe Street, Suite 2-510, Austin, Texas 78701, (512) 305-6900, or electronically to [augusta.gelfand@mail.capnet.state.tx.us](mailto:augusta.gelfand@mail.capnet.state.tx.us).

The amendment is proposed under the Occupational Therapy Practice Act (Act), Title 3, Subtitle H, Chapter 454 of the Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority to adopt rules consistent with this Act to carry out its duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

#### §373.1. *Supervision of Non-Licensed Personnel.*

(a) Occupational Therapists [~~OTRs~~ and ~~LOTs~~] are fully responsible for the planning and delivery of occupational therapy services. They may use non-licensed personnel to extend their services; however, the non-licensed personnel must be under the supervision of an occupational therapy practitioner.

(b) - (e) (No change.)

(f) The Non-Licensed Personnel may not:

- (1) perform occupational therapy evaluative procedures;[-]
- (2) initiate, plan, adjust, or modify occupational therapy procedures;[-]

(3) act on behalf of the occupational therapist [OTR or LOT] in any matter relating to occupational therapy which requires decision making or professional judgments; [judgements.]

(4) write or sign occupational therapy documents in the permanent record. However, non-licensed personnel may record quantitative data for tasks delegated by the supervising occupational therapy practitioners [OTR, LOT, COTA or LOTA]. Any documentation reflecting activities by non-licensed personnel must identify the name and title of that person and the name of the supervising occupational therapy practitioner [OTR, LOT, COTA or LOTA].

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902140

John P. Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-6900



#### 40 TAC §373.2

The Texas Board of Occupational Therapy Examiners proposes an amendment to §373.2, concerning Supervision of a Temporary Licensee. The amendment will restore the use of occupational therapist (OT) and occupational therapy assistant (OTA) as consistent with the Occupational Therapy Practice Act.

John P. Maline, Executive Director of the Executive Council of Physical Therapy and Occupational Therapy Examiners, has determined that for the first five-year period the rule is in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Mr. Maline also has determined that for each year of the first five years the rule is in effect the public benefit anticipated as a result of enforcing the rule will be clarification of terms used in the OT rules. There will be no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the rule as proposed.

Comments on the proposed amendment may be submitted to Augusta Gelfand, OT Coordinator, Texas Board of Occupational Therapy Examiners, 333 Guadalupe Street, Suite 2-510, Austin, Texas 78701, (512) 305-6900, or electronically to [augusta.gelfand@mail.capnet.state.tx.us](mailto:augusta.gelfand@mail.capnet.state.tx.us).

The amendment is proposed under the Occupational Therapy Practice Act (Act), Title 3, Subtitle H, Chapter 454 of the Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority to adopt rules consistent with this Act to carry out its duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

§373.2. *Supervision of a Temporary Licensee.*

(a) - (b) (No change.)

(c) Supervision of an occupational therapist with a temporary license includes documentation regarding:

(1) frequent communication between the supervising occupational therapist and the temporary licensee by telephone, written report or conference, including the review of progress of patients/clients assigned;[s] plus

(2) encounters twice a month where the occupational therapist [OTR or LOT] directly observes the temporary licensee providing services to one or more patients/clients with face-to-face, real time interaction.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902141

John P. Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-6900



## CHAPTER 376. REGISTRATION OF FACILITIES

### 40 TAC §376.1

The Texas Board of Occupational Therapy Examiners proposes an amendment to §376.1, concerning Definitions. The amendment will restore the use of occupational therapist (OT) and occupational therapy assistant (OTA) as consistent with the Occupational Therapy Practice Act.

John P. Maline, Executive Director of the Executive Council of Physical Therapy and Occupational Therapy Examiners, has determined that for the first five-year period the rule is in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Mr. Maline also has determined that for each year of the first five years the rule is in effect the public benefit anticipated as a result of enforcing the rule will be clarification of terms used in the OT rules. There will be no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the rule as proposed.

Comments on the proposed amendment may be submitted to Augusta Gelfand, OT Coordinator, Texas Board of Occupational Therapy Examiners, 333 Guadalupe Street, Suite 2-510, Austin, Texas 78701, (512) 305-6900, or electronically to [augusta.gelfand@mail.capnet.state.tx.us](mailto:augusta.gelfand@mail.capnet.state.tx.us).

The amendment is proposed under the Occupational Therapy Practice Act (Act), Title 3, Subtitle H, Chapter 454 of the Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority to adopt rules consistent with this Act to carry out its duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

§376.1. *Definitions.*

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

(1) Occupational Therapy Facility--A physical site, such as a building, office, or portable facility, where the practice of occupational therapy takes place. An Occupational Therapy Facility must be under the direction of an occupational therapist, registered or ~~hi-~~~~icensed~~ occupational therapist licensed by the board. The definition of Occupational Therapy Facility does not include a physical site such as a building, office, or portable facility if it meets all three conditions:

(A) It ~~[it]~~ is not in the care, custody or control of the individual or company providing occupational therapy services therein; and

(B) (No change.)

(C) Healthcare ~~healthcare~~ delivery is not the primary purpose, activity, or business of the site where the services are provided.

(2) The OT or OTR ~~[or LOT]~~ in Charge--An occupational therapist ~~[, registered or licensed occupational therapist]~~ who is designated on the application for registration and who has the authority and responsibility for the facility's compliance with the Act and Rules pertaining to the practice of occupational therapy in the facility.

(3) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902142

John P. Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-6900



#### 40 TAC §376.3

The Texas Board of Occupational Therapy Examiners proposes an amendment to §376.3, concerning Requirements for Registration Application. The amendment will restore the use of occupational therapist (OT) and occupational therapy assistant (OTA) as consistent with the Occupational Therapy Practice Act.

John P. Maline, Executive Director of the Executive Council of Physical Therapy and Occupational Therapy Examiners, has determined that for the first five-year period the rule is in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Mr. Maline also has determined that for each year of the first five years the rule is in effect the public benefit anticipated as a result of enforcing the rule will be clarification of terms used in the OT rules. There will be no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the rule as proposed.

Comments on the proposed amendment may be submitted to Augusta Gelfand, OT Coordinator, Texas Board of Occupational Therapy Examiners, 333 Guadalupe, Suite 2-510, Austin, Texas 78701, (512) 305-6900, or electronically to [augusta.gelfand@mail.capnet.state.tx.us](mailto:augusta.gelfand@mail.capnet.state.tx.us).

The amendment is proposed under the Occupational Therapy Practice Act (Act), Title 3, Subtitle H, Chapter 454 of the Occu-

pations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority to adopt rules consistent with this Act to carry out its duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

§376.3. *Requirements for Registration Application.*

(a) Registration applications must include:

(1) - (4) (No change.)

(5) the name and license number of the OT or OTR ~~[or LOT]~~ in Charge and his or her notarized signature;

(6) - (7) (No change.)

(8) the non-refundable application fee, as set by the Executive Council.<sup>[5]</sup>

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

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902143

John P. Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-6900



#### 40 TAC §376.4

The Texas Board of Occupational Therapy Examiners proposes an amendment to §376.4, concerning Requirements for Registered Facilities. The amendment will restore the use of occupational therapist (OT) and occupational therapy assistant (OTA) as consistent with the Occupational Therapy Practice Act.

John P. Maline, Executive Director of the Executive Council of Physical Therapy and Occupational Therapy Examiners, has determined that for the first five-year period the rule is in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Mr. Maline also has determined that for each year of the first five years the rule is in effect the public benefit anticipated as a result of enforcing the rule will be clarification of terms used in the OT rules. There will be no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the rule as proposed.

Comments on the proposed amendment may be submitted to Augusta Gelfand, OT Coordinator, Texas Board of Occupational Therapy Examiners, 333 Guadalupe Street, Suite 2-510, Austin, Texas 78701, (512) 305-6900, or electronically to [augusta.gelfand@mail.capnet.state.tx.us](mailto:augusta.gelfand@mail.capnet.state.tx.us).

The amendment is proposed under the Occupational Therapy Practice Act, Title 3, Subtitle H, Chapter 454 of the Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority to adopt rules consistent with this Act to carry out its duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

*§376.4. Requirements for Registered Facilities.*

(a) Each facility must have a designated OT or OTR [~~or LOT~~]-in-charge. A registered facility is required to report the name and license number of the new OT or OTR [~~or LOT~~]-in-charge no later than 30 days after the change occurs.

(b) - (d) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902144

John P. Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-6900



**40 TAC §376.6**

The Texas Board of Occupational Therapy Examiners proposes an amendment to §376.6, concerning Renewal of Registration Application. The amendment will restore the use of occupational therapist (OT) and occupational therapy assistant (OTA) as consistent with the Occupational Therapy Practice Act.

John P. Maline, Executive Director of the Executive Council of Physical Therapy and Occupational Therapy Examiners, has determined that for the first five-year period the rule is in effect there will be no fiscal implications for state or local government as a result of enforcing or administering the rule.

Mr. Maline also has determined that for each year of the first five years the rule is in effect the public benefit anticipated as a result of enforcing the rule will be clarification of terms used in the OT rules. There will be no effect on small businesses. There are no anticipated economic costs to persons who are required to comply with the rule as proposed.

Comments on the proposed amendment may be submitted to Augusta Gelfand, OT Coordinator, Texas Board of Occupational Therapy Examiners, 333 Guadalupe Street, Suite 2-510, Austin, Texas 78701, (512) 305-6900, or electronically to [augusta.gelfand@mail.capnet.state.tx.us](mailto:augusta.gelfand@mail.capnet.state.tx.us).

The amendment is proposed under the Occupational Therapy Practice Act, Title 3, Subtitle H, Chapter 454 of the Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority to adopt rules consistent with this Act to carry out its duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

*§376.6. Renewal of Registration Application.*

(a) (No change.)

(b) Requirements to renew a facility are:

(1) a [A] renewal signed by the owner, managing partner or officer, or a person authorized by the owner to complete the form and the OT or OTR [~~or LOT~~]-in-charge;

(2) a list [~~list~~] of all occupational therapy practitioners [~~OTRs, LOTs, COTAs and LOTAs~~] working at the facility; [~~and~~]

(3) the renewal fee as set by the Executive Council, and any late fees, which may be due; [~~and~~]

(4) an Occupational Therapist-in-Charge form with the notarized signature of the occupational therapist.

(c) - (e) (No change.)

(f) An Occupational Therapy Facility will be allowed to renew without a late fee if the renewal application and fee are received prior to the expiration date. However, the board will not issue the certificate until the Board receives the signed and notarized OT or OTR [~~or LOT~~]-in-Charge form and a list of the name(s) of the occupational therapy practitioners employed at that facility.

(g) (No change.)

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902145

John P. Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 305-6900



**TITLE 43. TRANSPORTATION**

**PART 1. TEXAS DEPARTMENT OF TRANSPORTATION**

**CHAPTER 25. TRAFFIC OPERATIONS  
SUBCHAPTER O. CRASH RECORDS  
INFORMATION SYSTEM**

**43 TAC §25.977**

The Texas Department of Transportation (department) proposes amendments to §25.977, concerning reporting of motor vehicle crashes by investigating officers.

**EXPLANATION OF PROPOSED AMENDMENTS**

Law enforcement officers who investigate motor vehicle crashes are required by Transportation Code, §550.062 to submit a crash report to the department within 10 days of the accident on a form prescribed by the department if the crash resulted in injury to or death of a person or \$1,000 or more of property damage. The form used for the report is referred to as the Texas Peace Officer's Crash Report, or more commonly as the CR-3.

Under the revisions to §25.977, Reporting by Investigating Officers, the Texas Transportation Commission (commission) adopts Form CR-3 by reference. The revisions remove the reference to the supplemental commercial motor vehicle report. The information needed for a commercial motor vehicle accident report is now included on Form CR-3 and therefore, a separate, supplemental report is unnecessary.

The department became the office of record for state crash data in October of 2007 when this function was transferred to the department from the Texas Department of Public Safety in accordance with Transportation Code, Chapter 550. The Department of Public Safety had adopted rule 37 TAC §3.9 regarding crash reporting, which adopted Form CR-3 by reference. This rule, along with the other rules regarding the state crash data program, was transferred to the department in October 2007 when the crash records function became part of the department. The Department of Public Safety is currently in the process of repealing 37 TAC §3.9.

Amendments to §25.977(c) return the rule to the earlier format of 37 TAC §3.9 by adopting the CR-3 form by reference. This change adheres to the previous rule adopted by the Texas Department of Public Safety and requires the department to propose and adopt changes to the form through the administrative rulemaking process.

Form CR-3 provides for the collection of specific information about a motor vehicle crash, information about the vehicles involved in the crash, and information about the people who were involved in the crash. The form includes various items such as, the date of the crash; location of the crash; type of highway where the crash occurred; whether the crash occurred on public or private property; driver and passenger names; injury severity; factors that contributed to the crash; commercial vehicle information such as, vehicle type, configuration, and carrier name; driver's license information; vehicle information, including the model, make, year, and vehicle identification number; citation information; emergency response information; and information about safety belt usage. The information collected is necessary to utilize the report for its intended purpose of meeting state and federal reporting requirements and identifying safety issues.

In 2007, the department and the Texas Department of Public Safety received a request from the Texas Department of Insurance and the Texas insurance industry to remove driver's telephone numbers from Form CR-3 because insurance fraud was being perpetrated on crash victims who were being contacted at the telephone numbers listed on the form. The Department of Public Safety consulted with various law enforcement agencies concerning the removal of the driver's telephone number from

Form CR-3. Since neither the department nor law enforcement agencies were able to identify a business need for a driver's telephone number or any other telephone number, the form, as proposed for adoption, does not include driver's telephone numbers as neither the department nor law enforcement agencies have a business need for this information.

Amendments to §25.977(e) strike the requirement of a supplemental commercial motor vehicle report. Form CR-3 now includes the necessary commercial motor vehicle information; therefore, there is no need for a supplemental form. This change will benefit law enforcement by eliminating the completion of a second form.

The form may be completed by a law enforcement agency in one of three ways: printing out the form and completing it manually; completing the electronic version of the form on a computer; or entering and submitting the data via a web based data entry system. The information requested and submitted by a law enforcement officer remains the same regardless of the method used to complete the form.

The Form CR-3 proposed for adoption is available on the department web site at the following location: [www.txdot.gov](http://www.txdot.gov).

## FISCAL NOTE

James Bass, Chief Financial Officer, has determined that for each of the first five years the amendments as proposed are in effect, there will be no fiscal implications for state or local governments as a result of enforcing or administering the amendments.

Carlos Lopez, P.E., Director, Traffic Operations Division, has certified that there will be no significant impact on local economies or overall employment as a result of enforcing or administering the amendments.

## PUBLIC BENEFIT AND COST

Mr. Lopez 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 enforcing or administering the amendments will be more efficient reporting of crash data to the state and more accurate crash data. There are no anticipated economic costs for persons required to comply with the sections as proposed. There will be no adverse economic effect on small businesses.

## SUBMITTAL OF COMMENTS

Written comments on the proposed amendments to §25.977, as well as proposed revisions to the CR-3 form, may be submitted to Carlos Lopez, P.E., Director, Traffic Operations Division, Texas Department of Transportation, 125 East 11th Street, Austin, Texas 78701-2483. The deadline for receipt of comments is 5:00 p.m. on July 13, 2009.

## STATUTORY AUTHORITY

The amendments are proposed under Transportation Code, §201.101, which provides the commission with the authority to establish rules for the conduct of the work of the department, and more specifically Transportation Code, §550.064, which authorizes the department to prescribe the form of motor vehicle crash reports.

## CROSS REFERENCE TO STATUTE

Transportation Code, Chapter 550.

§25.977. *Reporting by Investigating Officers.*

(a) A law enforcement officer who investigates a motor vehicle crash shall submit a crash record report within 10 days of the accident on a form prescribed by the department if the crash resulted in:

- (1) injury to or death of a person;
- (2) \$1000 or more of property damage to the property of any one person.

(b) The crash record report form must include:

- (1) information about the crash;
- (2) information about all vehicles involved in the crash;
- (3) information about each person involved in the crash;

and

(4) other factors necessary for the department to comply with state and federal reporting requirements.

(c) The department has developed Form CR-3, Texas Peace Officer's Crash Report, to satisfy the requirements of subsection (b) of this section. The commission adopts Form CR-3 by reference. The form is available through the department's website at [www.txdot.gov](http://www.txdot.gov).

(d) Incomplete or inaccurate crash reports, with the exception of location information as described in §25.974(b) of this subchapter,

will be returned to the originating law enforcement agency for correction.

~~[(e) An officer investigating a crash involving a commercial motor vehicle also shall submit a commercial motor vehicle enforcement supplemental report on a form prescribed by the department.]~~

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902080

Bob Jackson

General Counsel

Texas Department of Transportation

Earliest possible date of adoption: July 12, 2009

For further information, please call: (512) 463-8683



# 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 19. EDUCATION

### PART 1. TEXAS HIGHER EDUCATION COORDINATING BOARD

#### CHAPTER 5. RULES APPLYING TO PUBLIC UNIVERSITIES, HEALTH-RELATED INSTITUTIONS, AND/OR SELECTED PUBLIC COLLEGES OF HIGHER EDUCATION IN TEXAS

##### SUBCHAPTER A. GENERAL PROVISIONS

###### 19 TAC §§5.8 - 5.10

Proposed new §§5.8 - 5.10, published in the November 28, 2008, issue of the *Texas Register* (34 TexReg 9641), are withdrawn. The agency failed to adopt the proposal within six months of publication. (See Government Code, §2001.027, and 1 TAC §91.38(d).)

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902074

### CHAPTER 21. STUDENT SERVICES SUBCHAPTER NN. EXEMPTION PROGRAM FOR VETERANS AND THEIR DEPENDENTS (THE HAZLEWOOD ACT)

#### 19 TAC §21.2100, §21.2103

The Texas Higher Education Coordinating Board withdraws the proposed amendments to §21.2100 and §21.2103 which appeared in the May 8, 2009, issue of the *Texas Register* (33 TexReg 2747).

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902077

Bill Franz

General Counsel

Texas Higher Education Coordinating Board

Effective date: May 29, 2009

For further information, please call: (512) 427-6114



# 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 1. OFFICE OF THE GOVERNOR

#### CHAPTER 3. CRIMINAL JUSTICE DIVISION

The Office of the Governor, Criminal Justice Division (CJD), adopts the amendment of Title 1, Part 1, Chapter 3, Subchapter A, §§3.1, 3.3, 3.5, 3.7, 3.9, 3.11, 3.21, and 3.25; Subchapter B, §§3.51, 3.73, 3.75, 3.77, 3.79, 3.81, 3.83, and 3.87; Subchapter D, §§3.2001, 3.2009, 3.2013, 3.2021, 3.2023, and 3.2025; Subchapter E, §§3.2501, 3.2505, 3.2507, 3.2509, 3.2513, 3.2517, 3.2519, 3.2521, 3.2523, 3.2525, 3.2527, and 3.2529; Subchapter F, §3.2601 and §3.2603; Subchapter G, §3.8110; and Subchapter J, §3.9400 and §3.9405. All sections, except for §3.5, are adopted without changes to the proposed text as published in the April 10, 2009, issue of the *Texas Register* (34 TexReg 2325). Section 3.5 is adopted with changes to correct a typographical error in subsection (a).

The Office of the Governor, CJD, adopts the repeal of Title 1, Part 1, Chapter 3, Subchapter A, §3.17 and §3.19; Subchapter B, §§3.53, 3.55 and 3.71; and Subchapter G, Division 3, Governor's S.T.O.P. Violence Against Women Planning Council, §§3.8300, 3.8305, 3.8310, 3.8315, and 3.8320 without changes to the proposal as published in the April 10, 2009, issue of the *Texas Register* (34 TexReg 2325).

The adopted amendment to §3.1 removes the redundant language to clarify the intended purpose of this section.

The adopted amendment to §3.3 organizes the definitions and updates the outdated definitions relevant to CJD activities.

The adopted amendment to §3.5 removes the outdated and redundant language, as information is already listed in the *Texas Register* and CJD publications.

The adopted amendments to §3.7 and §3.9 remove the outdated and excessive wording no longer relevant to these sections intended audiences.

The adopted amendment to §3.11 updates the section with the Supplemental Award Acceptance information, and removes excessive language to clarify this section.

The adopted amendment to §3.21 updates the section since grant application and administration require dedicated internet capability.

The adopted amendment to §3.25 removes the excessive wording to clarify the meaning of this section.

The repeal of §3.17 is adopted because the information is already provided per fund source on the Request for Application (RFA) and stated in the CJD Guide to Grants.

The repeal of §3.19 is adopted because it is already referenced in §3.1 of this chapter, the RFA, and the CJD Guide to Grants.

The adopted amendment to §3.51 removes the redundant language, as information is already stated as a condition of Council of Government (COG) contracts with CJD.

The repeal of §3.53 is adopted because the Governor's Juvenile Justice Advisory Council coordinates regularly with the Governor's Office, and as such, the priorities are frequently amended. The priorities are listed in the Office of Juvenile Justice and Delinquency Prevention (OJJDP) Title II, Formula Grant Program's "Three-Year Plan", and in CJD's RFA each grant cycle.

The repeal of §3.55 is adopted because the prohibitions do not apply to and varies across all fund sources. Specific prohibitions are listed per fund source on the RFA and are stated in CJD's Guide to Grants.

The repeal of §3.71 is adopted because the information is redundant and outdated.

The adopted amendment to §3.73 updates the language to provide a succinct explanation of match policy. The information being removed from this section attempts to address every possible question as to match policies. Specific match policies are listed per fund source on the RFA and stated in the CJD Guide to Grants.

The adopted amendment to §3.75 removes excessive wording which obscures this section's intended purpose. The information being removed is already stated in a specific RFA for funding opportunities.

The adopted amendment to §3.77 removes excessive wording which obscures this section's intended purpose. Contracts addressed in this section fall under Texas contract laws.

The adopted amendment to §3.79 removes excessive language and clarifies records maintenance for training courses.

The adopted amendment to §3.81 removes excessive wording, and clarifies the requirement to provide CJD with an itemized list of equipment purchases upon application submission and grant adjustment.

The adopted amendment to §3.83 removes redundant language, as information is provided in §3.3 of this chapter.

The adopted amendment to §3.87 removes outdated information as to the guidelines for program income, and simplifies the requirements in this section.

The adopted amendment to §3.2001 updates outdated information to clarify this section.

The adopted amendment to §3.2009 removes outdated information, as grantees are no longer required to submit a Cooperative Working Agreement (CWA) to CJD.

The adopted amendment to §3.2013 removes excessive and redundant language to align with CJD policies regarding equipment and contractual and professional services.

The adopted amendment to §3.2021 updates outdated information, as new CJD guidelines relating to resolutions apply to only certain entities.

The adopted amendments to §3.2023 and §3.2025 correct minor language in these sections.

The adopted amendment to §3.2501 removes excessive wording and outdated information, as this information is already provided in the CJD Guide to Grants and CJD policies.

The adopted amendment to §3.2505 removes excessive language and updates outdated information related to the audit report requirement.

The adopted amendment to §3.2507 updates outdated information regarding financial status reports, and clarifies when a grantee's funds lapse or liquidate.

The adopted amendment to §3.2509 clarifies the language related to equipment inventory reports.

The adopted amendment to §3.2513 removes excessive wording which obscures this section's intended purpose, as this information is already provided in the CJD Guide to Grants and CJD publications.

The adopted amendment to §3.2517 removes excessive wording, and clarifies when CJD will withhold grant payments.

The adopted amendment to §3.2519 removes outdated wording which obscures this section's intended purpose.

The adopted amendment to §3.2521 removes outdated wording to align with CJD's policies and procedures.

The adopted amendment to §3.2523 removes excessive language related to violations of laws.

The adopted amendment to §3.2525 removes excessive wording to clarify this section.

The adopted amendment to §3.2527 removes excessive and outdated language, as this information is already provided in the CJD Guide to Grants and CJD publications.

The adopted amendment to §3.2529 removes redundant language to clarify this section's intended purpose.

The adopted amendments to §3.2601 and §3.2603 remove outdated and excessive wording to align with CJD's monitoring policies.

The adopted amendment to §3.8110 updates the board member's term of office from two to four years.

The repeal of §§3.8300, 3.8305, 3.8310, 3.8315, and 3.8320 are adopted because the council no longer exists. The council has fulfilled its stated mission per Governor Perry's Executive Order, RP 7; therefore, the rules in this section are being repealed.

The adopted amendment to §3.9400 removes excessive wording related to definitions in this subchapter.

The adopted amendment to §3.9405 updates language to clarify this section.

No comments were received regarding adoption of these amended and repealed rules.

## SUBCHAPTER A. GENERAL GRANT PROGRAM PROVISIONS

### 1 TAC §§3.1, 3.3, 3.5, 3.7, 3.9, 3.11, 3.21, 3.25

The amendment of these rules is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The amended rules implement §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the amendment of these rules.

#### §3.5. *Submission Process.*

(a) When applying for a grant pursuant to a RFA published in the *Texas Register* by CJD, applicants must submit and certify their applications according to the requirements provided in the RFA.

(b) CJD may also consider applications for grants that are not submitted pursuant to an RFA. Applicants will be selected in accordance with §3.7(b) of this chapter.

(c) Applicants must apply for funds using the procedures, forms, and certifications prescribed by CJD.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902146

Kevin Green

Assistant General Counsel

Office of the Governor

Effective date: June 21, 2009

Proposal publication date: April 10, 2009

For further information, please call: (512) 463-1919



### 1 TAC §3.17, §3.19

The repeal of these rules is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The repealed rules implement §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the repeal of these rules.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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Kevin Green  
Assistant General Counsel  
Office of the Governor  
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For further information, please call: (512) 463-1919



**SUBCHAPTER B. GENERAL GRANT  
PROGRAM POLICIES  
DIVISION 1. ELIGIBILITY REQUIREMENTS**

**1 TAC §3.51**

The amendment of this rule is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The amended rule implements §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the amendment of this rule.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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**1 TAC §3.53, §3.55**

The repeal of these rules is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The repealed rules implement §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the repeal of these rules.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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**DIVISION 2. GRANT BUDGET  
REQUIREMENTS**

**1 TAC §3.71**

The repeal of this rule is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The repealed rule implements §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the repeal of this rule.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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**1 TAC §§3.73, 3.75, 3.77, 3.79, 3.81, 3.83, 3.87**

The amendment of these rules is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The amended rules implement §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the amendment of these rules.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## SUBCHAPTER D. CONDITIONS OF GRANT FUNDING

### 1 TAC §§3.2001, 3.2009, 3.2013, 3.2021, 3.2023, 3.2025

The amendment of these rules is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The amended rules implement §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the amendment of these rules.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## SUBCHAPTER E. ADMINISTERING GRANTS

### 1 TAC §§3.2501, 3.2505, 3.2507, 3.2509, 3.2513, 3.2517, 3.2519, 3.2521, 3.2523, 3.2525, 3.2527, 3.2529

The amendment of these rules is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The amended rules implement §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the amendment of these rules.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## SUBCHAPTER F. PROGRAM MONITORING AND AUDITS

### 1 TAC §§3.2601, §3.2603

The amendment of these rules is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The amended rules implement §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the amendment of these rules.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## SUBCHAPTER G. CRIMINAL JUSTICE DIVISION ADVISORY BOARDS DIVISION 1. CRIME STOPPERS ADVISORY COUNCIL

### 1 TAC §3.8110

The amendment of this rule is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The amended rule implements §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the amendment of this rule.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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### DIVISION 3. GOVERNOR'S S.T.O.P. VIOLENCE AGAINST WOMEN PLANNING COUNCIL

#### 1 TAC §§3.8300, 3.8305, 3.8310, 3.8315, 3.8320

The repeal of these rules is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The repealed rules implement §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the repeal of these rules.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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### SUBCHAPTER J. STATE PLANNING ASSISTANCE GRANTS

#### 1 TAC §3.9400, §3.9405

The amendment of these rules is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The amended rules implement §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the amendment of these rules.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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### SUBCHAPTER H. CRIME STOPPERS PROGRAM CERTIFICATION DIVISION 1. CRIME STOPPERS PROGRAM CERTIFICATION

#### 1 TAC §§3.9017, 3.9019, 3.9021

The Office of the Governor, Criminal Justice Division (CJD), adopts the addition of Title 1, Part 1, Chapter 3, Subchapter H, §§3.9017, 3.9019, and 3.9021 without changes to the proposed text as published in the April 10, 2009, issue of the *Texas Register* (34 TexReg 2336). Pursuant to Chapter 414, Texas Government Code, the adopted rules were approved by the Governor's Crime Stoppers Advisory Council (Council) on May 27, 2009.

The adopted amendment to Subchapter H, Division 1, allows the Council to establish procedures for certified local Crime Stoppers programs to follow when a certified program wishes to merge with another certified program or a Crime Stoppers program that is not certified but is a 501(c)(3) corporation, and when a certified program wishes to add a geographical jurisdiction that does not currently have a local Crime Stoppers program.

The adopted addition will enable the Council to more effectively oversee multi-county programs which receive court funds under the provisions of Articles 42.12, 37.073 and 42.152, Code of Criminal Procedure. The Council needs to assure that certified programs have followed all established procedures of the U.S. Internal Revenue Service and the Texas Secretary of State regarding non-profit 501(c)(3) corporations, that the programs are manageable, and that the programs are following the Standard Operating Procedures established by the Council for certified local programs. The amendment provides that any certified local Crime Stoppers program seeking to add counties or cities to its area of operation reapply for certification with the Council since the expanded program would no longer be the same program that the Council originally certified.

No comments were received regarding adoption of the addition of these rules.

The addition of these rules is adopted under §772.006(a)(10), Texas Government Code, which authorizes CJD to adopt rules and procedures as necessary.

The added rules implement §772.006(a), Texas Government Code, which requires CJD to administer state and federal grant programs, and to assist the Governor in developing policies, programs, and proposed legislation for improving the coordination, administration, and effectiveness of the criminal justice system.

No other statutes, articles, or codes are affected by the addition of these rules.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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Kevin Green

Assistant General Counsel

Office of the Governor

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For further information, please call: (512) 463-1919



## PART 15. TEXAS HEALTH AND HUMAN SERVICES COMMISSION

### CHAPTER 354. MEDICAID HEALTH SERVICES

#### SUBCHAPTER A. PURCHASED HEALTH SERVICES

#### DIVISION 19. PSYCHOLOGISTS' SERVICES

##### 1 TAC §354.1281

The Texas Health and Human Services Commission (HHSC) adopts the amendment to §354.1281, relating to services performed by a licensed psychological associate (LPA) under the direct supervision of a licensed psychologist, without changes to the proposed text as published in the April 3, 2009, issue of the *Texas Register* (34 TexReg 2211) and will not be republished.

##### Background and Justification

The Texas State Board of Examiners of Psychologists requires an LPA to work under the supervision of a licensed psychologist and does not allow an LPA to engage in independent practice. Currently, Texas Medicaid does not reimburse licensed psychologists for services provided by an LPA who works under the supervision of a psychologist and does not allow an LPA to enroll as a Medicaid provider.

Medicare allows reimbursement to clinical psychologists for services performed by an LPA under the psychologist's direct supervision. The Code of Federal Regulations (42 CFR §410.71) states that services performed by an LPA are covered under Medicare if: the services are performed under the direct supervision of a licensed psychologist; the licensed psychologist is immediately available to provide assistance and direction throughout the time the service is being performed; and the LPA performing the service is an employee of either the licensed psychologist or the legal entity that employs the licensed psychologist.

The amended rule aligns Medicaid policy with Medicare by allowing a psychologist to be reimbursed for services performed by an LPA when the LPA is under the direct supervision of the licensed psychologist. The amended rule also remains consistent with the Texas State Board of Examiners of Psychologists rules that prohibit an LPA from engaging in independent practice. Allowing Medicaid reimbursement for services provided by an LPA is expected to expand access to behavioral health services because it allows a new provider type to perform Medicaid reimbursable services.

##### Comments

The 30-day comment period ended May 3, 2009. During this period, HHSC received one comment in support of the proposed amendment. A summary of the comment relating to the proposed amended rule follows.

Comment: Psychologists are fully capable of hiring and assuming responsibility for the work of assistants serving under their supervision. LPAs are perfectly positioned to conduct the technical aspects of psychological evaluations and thereby ensure that more young people who need this service will receive it. Low-income Texans deserve access to the psychological evaluations needed for proper diagnosis and treatment, and psychologists alone cannot meet the need. LPAs can bridge the gap.

Response: HHSC acknowledges these supportive comments.

The amendment is adopted under Texas Government Code §531.033, which provides the Executive Commissioner of HHSC with broad rulemaking authority; and Texas Human Resources Code §32.021 and Texas Government Code §531.021(a), which provide HHSC with the authority to administer the federal medical assistance (Medicaid) program in Texas.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902101

Steve Aragón

Chief Counsel

Texas Health and Human Services Commission

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For further information, please call: (512) 424-6900



## TITLE 19. EDUCATION

### PART 7. STATE BOARD FOR EDUCATOR CERTIFICATION

#### CHAPTER 230. PROFESSIONAL EDUCATOR PREPARATION AND CERTIFICATION

The State Board for Educator Certification (SBEC) adopts new §§230.1, 230.412, and 230.481, amendments to §§230.5, 230.411, 230.413, 230.431 - 230.438, 230.461 - 230.464, 230.482, 230.483, 230.501 - 230.507, 230.512, 230.551 - 230.555, 230.559, 230.560, and 230.610, and the repeal of §§230.121, 230.192 - 230.199, 230.301, 230.305, 230.310, 230.316, 230.481, 230.484, 230.509 - 230.511, 230.601, and 230.801, concerning provisions for professional educator preparation and certification. New §§230.1, 230.412, and 230.481, amendments to §§230.5, 230.411, 230.413, 230.431, 230.433 - 230.438, 230.461 - 230.464, 230.482, 230.483, 230.501 - 230.503, 230.505 - 230.507, 230.512, 230.551 - 230.555, 230.559, 230.560, and 230.610, and the repeal of §§230.121, 230.192 - 230.199, 230.301, 230.305, 230.310, 230.316, 230.481, 230.484, 230.509 - 230.511, 230.601, and 230.801 are adopted without changes to the proposed text as published in the February 27, 2009, issue of the *Texas Register* (34 TexReg 1336) and will not be republished. The amendments

to §230.432 and §230.504 are adopted with changes to the proposed text published in the February 27, 2009, issue. The sections provide for rules that establish guidelines and procedures for certification requirements, fees, permits, educational aides, and assignment criteria relating to professional educator preparation and certification.

The adopted revisions to 19 TAC Chapter 230 update the rules to reflect current law and add specificity to the requirements for professional educator preparation and certification. The adopted new sections, amendments, and repeals result from the SBEC's rule review conducted in accordance with Texas Government Code, §2001.039.

The adopted revisions reflect discussions held during the June 5 and 6, 2008, and November 5, 2008, stakeholder meetings. Following is a description of the adopted changes.

#### *Subchapter A. Assessment of Educators*

This subchapter was reorganized as new Subchapter B. Language in §230.5(f) was updated since examination scores are no longer mailed to the examinee. As a result of input from stakeholders, §230.5(i) was deleted because a general reference can be found in 19 TAC Chapter 233, Categories of Classroom Teaching Certificates.

#### *Subchapter E. Centers for Professional Development of Teachers*

This subchapter was repealed due to the fact that the Centers for Professional Development of Teachers no longer exist.

#### *Subchapter G. Certification Requirement for Classroom Teachers*

This subchapter was repealed since most of the rules are now obsolete. Sections 230.193, 230.194, and 230.199(d)(2), relating to teacher certificates and endorsements, were moved to new §230.481 and §230.482 in Subchapter P.

#### *Subchapter J. Certification Requirements for Educators Other than Classroom Teachers and Educational Aides*

This subchapter was repealed since the certificates included in this subchapter were replaced with new certificates. Certification information related to the reading specialist, temporary certificate, and educational diagnostician can be found in other rules of the SBEC.

#### *Subchapter M. Certification of Educators in General*

Language in §230.413(a) was revised to align with recently approved language regarding degrees in Chapter 232, General Certification Provisions. Language in §230.413(c) and (d), relating to elementary and secondary certificate options, was deleted since these rules are now obsolete. Language in §230.413(e) was deleted since provisions for a nonrenewable permit are described in Subchapter Q.

#### *Subchapter N. Certificate Issuance Procedures*

Language in §230.431(d) was added to emphasize that the virtual certificate is the official record of educator certification. Language in §230.432 was revised to reflect the current application and recommendation process. Language in §230.433 was added to clarify that a certificate must be active and valid in order to issue a duplicate. Language in §230.434(a)(1), relating to certificate issuance dates, was modified to update the rule. Language in §230.434(b)(1) was updated since education service centers are no longer required to process permits. The title of

§230.437 was revised to emphasize that certification by examination is for additional certificates and not initial certificates.

Since published as proposed, language in §230.432 was modified further to specify the requirement for SBEC approval of educator preparation programs.

#### *Subchapter O. Texas Educator Certificates Based on Certification and College Credentials from Other States or Territories of the United States*

Language in §230.462(b)(1), relating to special subject certificates, was deleted since the rule was obsolete. Language in §230.462(b)(2) was revised to align with standard certification requirements and moved as part of subsection (b). Language in §230.462(d) was added regarding the validity of a one-year certificate to provide some flexibility to employing school districts when circumstances beyond the educator's control arise. Section 230.462(h) and (i), relating to transition language, was deleted since the rules no longer apply.

#### *Subchapter P. Requirements for Standard Certificates and Specialized Assignments or Programs*

Section 230.481 was repealed since the provision was moved to new §230.412. As a result of stakeholder input, language in §230.483(a)(4) was added to allow educator preparation programs to prepare teachers for health science technology education certification and trade and industrial education certification in one year. Language in §230.483(c) was added to clarify teaching experience may be used in lieu of on-the-job experience under the career and technical education certificate. Language in §§230.482(a)(4) and (5), 230.482(b) and (d), 230.483(a) - (e), and 230.484 was deleted since the rules are obsolete or can be found in 19 TAC Chapter 233, Categories of Classroom Teaching Certificates.

#### *Subchapter Q. Permits*

Language in §230.501(c) was added to emphasize that consent is required when a certified teacher is to be placed on an emergency permit. Language in §230.504(b)(1) was added to clarify the subjects directly related to the elementary curriculum. As a result of stakeholder input, language in §230.504(b)(2) was added to clarify permit requirements for the elementary foreign language assignment. In response to input from the Texas Education Agency (TEA) curriculum staff, language in §230.504(f)(1) was revised to update the permit requirements for instructing English language learners. Language in §230.504(e)(2) was revised since an associate degree is no longer an option for health science technology education certification. New requirements were added to §230.504(e)(3) - (6) to align with new career and technical education certificate requirements. Language in §230.504(f)(2)(A) and (B) was revised to incorporate current terminology, resulting from stakeholder input. Sections 230.509, 230.510, and 230.511 were repealed since the Visiting International Teacher (VIT) certificate is now available for exchange teachers. Language was also deleted throughout this subchapter to remove obsolete provisions.

Since published as proposed, language in §230.504(d)(1) was modified further to specify that the 24 semester credit hours must be in the subject to be taught.

#### *Subchapter S. Educational Aide Certificate*

This subchapter contains no substantive content changes.

#### *Subchapter U. Assignment of Public School Personnel*

This subchapter was repealed since the contents were reorganized as new 19 TAC §231.1, Criteria for Assignment of Public School Personnel, to provide clarity and improved accessibility to the requirements relating to the assignment of educators.

#### *Subchapter V. Continuing Education*

The title was revised to clarify the information contained in this subchapter related to teacher induction and mentoring.

#### *Subchapter Y. Definitions*

This subchapter was repealed since definitions relating to professional educator preparation and certification were revised and reorganized under new Subchapter A to align with definitions found in SBEC rules.

#### *Technical Changes*

Throughout Chapter 230, numerous grammatical and technical changes were made such as replacing the term "executive director" with the term "TEA staff" or "State Board for Educator Certification" where appropriate. Also, statutory citation references were updated and standardized to reflect current law and Texas Register formatting requirements. Sections were also restructured for consistency and readability.

Regarding procedural and reporting implications for the adopted rule actions, the TEA staff have determined that there are no new procedural and reporting implications to school districts and educators. The adopted rule actions do not include any additional locally maintained paperwork requirements.

There is no direct adverse economic impact for small businesses and microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Following the February 2009 SBEC meeting, the proposed revisions to 19 TAC Chapter 230 were filed with the Texas Register initiating the official public comment period. The following comments were received regarding the proposed revisions.

Comment: The president of the Texas Educational Diagnosticians' Association (TEDA) and a past officer of the TEDA commented that proposed subsection (g)(2) in §230.504, Specific Requirements for Initial Emergency Permits, should be amended to continue to require an educational diagnostician to be a certified teacher, with a minimum of two years of classroom teaching experience. The president of the TEDA further commented that it is imperative for an educational diagnostician to be a certified teacher since an educational diagnostician is responsible for a variety of duties such as individual student evaluations and advising and collaborating with parents, teachers, and other educational professionals regarding appropriate educational programming for each student. The president of the TEDA also commented that the TEDA would recommend to the SBEC during the rule review of 19 TAC Chapter 239, Student Services Certificates, this summer that language be reinstated to require a valid provisional or standard teaching certificate for an educational diagnostician. The past officer of the TEDA further commented that educational diagnosticians consult with and work with teachers to provide students with special needs a public education that meets their individual needs as required by federal and state law. The past officer further commented that both certification and experience provide the knowledge needed to serve as an educational diagnostician. Additionally, one educational diagnostician from Burseson-Milam Special Services, one educational diagnostician from Amarillo Independent School Dis-

trict (ISD), one educational diagnostician from Frisco ISD, and the chair of the Texas Professional Educational Diagnosticians Board of Registry, Inc., submitted comments in support of the TEDA's position on the matter.

Board Response: The SBEC disagreed and took action to adopt, subject to State Board of Education (SBOE) review, maintaining the language as published as proposed. Currently, §230.504, related to emergency permits, requires that an individual be certified based on a bachelor's degree. However, the amendment aligns §230.504 with 19 TAC §239.84, Requirements for the Issuance of the Standard Educational Diagnostician Certificate, which does not require a teaching certificate. The language in §230.504(g)(2)(D) does require two creditable years of classroom teaching experience. It is not the intent of the SBEC to discontinue the teaching experience requirement.

Chapter 239 is scheduled for review in summer 2009 under Texas Government Code, §2001.039. When the rule review of Chapter 239 is completed, if it is determined that a revision to §230.504 is needed, TEA staff would present revisions for SBEC consideration to ensure alignment of the requirements for an educational diagnostician in both chapters.

Comment: Three educational diagnosticians from Frisco ISD and one from Van Zandt Shared Services commented that the requirements for the position of educational diagnostician in the public school setting should retain the master's degree requirement and two to three years of teaching experience.

Board Response: The comment addresses issues outside the scope of the current rule proposal. The language in §230.504(g)(2) relates to emergency permits and not to the issuance of a standard educational diagnostician certificate. The requirements for the issuance of a standard educational diagnostician certificate are codified in 19 TAC §239.84, which requires a master's degree and two school years of classroom teaching experience.

Comment: An individual commented that school counselors also must have classroom experience.

Board Response: The SBEC agreed and took action to adopt, subject to SBOE review, maintaining the language as published as proposed. The language in §230.504(g)(1)(C) requires two creditable years of classroom teaching experience.

The SBOE took no action on the review of new 19 TAC §§230.1, 230.412, and 230.481, amendments to §§230.5, 230.411, 230.413, 230.431 - 230.438, 230.461 - 430.464, 230.482, 230.483, 230.501 - 230.507, 230.512, 230.551 - 230.555, 230.559, 230.560, and 230.610, and the repeal of §§230.121, 230.192 - 230.199, 230.301, 230.305, 230.310, 230.316, 230.481, 230.484, 230.509 - 230.511, 230.601, and 230.801 at the May 22, 2009, SBOE meeting.

## **SUBCHAPTER A. DEFINITIONS**

### **19 TAC §230.1**

The new section is adopted under the Texas Education Code (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 §21.041(b)(2), which requires the SBEC to propose rules that specify the classes of educator certificates to be issued, including emergency certificates.



The adopted new section implements the TEC, §21.041(b)(1) and (2).

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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Jerel Booker

Associate Commissioner, Educator Quality and Standards, Texas Education Agency

State Board for Educator Certification

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For further information, please call: (512) 475-1497



## SUBCHAPTER B. ASSESSMENT OF EDUCATORS

### 19 TAC §230.5

The amendment is adopted under the Texas Education Code (TEC), §21.031(a), which states that the State Board for Educator Certification (SBEC) shall regulate and oversee all aspects of the certification, continuing education, and standards of conduct of public school educators; §21.031(b), which states that in proposing rules under the TEC, Chapter 21, Subchapter B, the SBEC shall ensure that all candidates for certification or renewal of certification demonstrate the knowledge and skills necessary to improve the performance of the diverse student population of this state; §21.045(a)(1), which authorizes the SBEC to propose rules establishing standards to govern the approval and continuing accountability of all educator preparation programs based on information that is disaggregated with respect to sex and ethnicity and that includes results of the certification examinations prescribed under the TEC, §21.048(a); and §21.048(a), which requires the SBEC to propose rules prescribing comprehensive examinations for each class of certificate issued by the SBEC.

The adopted amendment implements the TEC, §§21.031, 21.045(a)(1), and 21.048(a).

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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State Board of Educator Certification

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## SUBCHAPTER E. CENTERS FOR PROFESSIONAL DEVELOPMENT OF TEACHERS

### 19 TAC §230.121

The repeal is adopted under the Texas Education Code (TEC), §21.047(a), which states that the State Board for Educator Certification (SBEC) may develop the process for the establishment of centers for professional development through institutions of higher education for the purpose of integrating technology and innovative teaching practices in the preservice and staff development training of public school teachers and administrators; §21.047(b), which states that, on application by a center, the SBEC shall make grants to the center for its programs from funds derived from gifts, grants, and legislative appropriations for that purpose; and §21.047(c), which states that a center may develop and implement a comprehensive field-based educator preparation program to supplement the internship hours required in the TEC, §21.050.

The adopted repeal implements the TEC, §21.047.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## SUBCHAPTER G. CERTIFICATION REQUIREMENT FOR CLASSROOM TEACHERS

### 19 TAC §§230.192 - 230.199

The repeals are adopted under the Texas Education Code (TEC), §21.031(a), which states that the State Board for Educator Certification (SBEC) shall regulate and oversee all aspects of the certification, continuing education, and standards of conduct of public school educators; §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; §21.041(b)(2), which requires the SBEC to propose rules that specify the classes of educator certificates to be issued, including emergency certificates; and §21.041(b)(3), which requires the SBEC to propose rules that specify the period for which each class of educator certificate is valid.

The adopted repeals implement the TEC, §21.031(a) and §21.041(b)(1) - (3).

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## SUBCHAPTER J. CERTIFICATION REQUIREMENTS FOR EDUCATORS OTHER THAN CLASSROOM TEACHERS AND EDUCATIONAL AIDES

### 19 TAC §§230.301, 230.305, 230.310, 230.316

The repeals are adopted under the Texas Education Code (TEC), §21.041(b)(2), which requires the State Board for Educator Certification to propose rules that specify the classes of educator certificates to be issued, including emergency certificates.

The adopted repeals implement the TEC, §21.041(b)(2).

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## SUBCHAPTER M. CERTIFICATION OF EDUCATORS IN GENERAL

### 19 TAC §§230.411 - 230.413

The amendments and new section are adopted under the Texas Education Code (TEC), §21.041(b)(2), which requires the State Board for Educator Certification (SBEC) to propose rules that specify the classes of educator certificates to be issued, including emergency certificates; §21.041(b)(4), which requires the SBEC to propose rules that specify the requirements for the issuance and renewal of an educator certificate; §21.044, which authorizes the SBEC to propose rules establishing the training requirements a person must accomplish to obtain a certificate, enter an internship, or enter an induction-year program and specify the minimum academic qualifications required for a certificate; §21.048(a), which requires the SBEC to propose rules prescribing comprehensive examinations for each class of certificate issued by the SBEC; §21.048(b), which states that the SBEC may not administer a written examination to determine the competence or level of performance of an educator who has a hearing impairment unless the examination has been field tested to determine its appropriateness, reliability, and validity as applied to, and minimum acceptable performance scores

for, persons with hearing impairments; §21.048(c), which states that an educator who has a hearing impairment is exempt from taking a written examination for a period ending on the first anniversary of the date on which the SBEC determines, on the basis of appropriate field tests, that the examination complies with the standards specified in subsection (b) of this section; §21.048(c)(1), which states that the results of an examination administered under this section are confidential and are not subject to disclosure under the Texas Government Code, Chapter 552, unless the disclosure is regarding notification to a parent of the assignment of an uncertified teacher to a classroom as required by the TEC, §21.057, or the educator has failed the examination more than five times; §21.048(d), which states the definitions for hearing impairment, reliability, and validity when used in the TEC, §21.048; §21.050(a), which states that a person who applies for a teaching certificate for which SBEC rules require a bachelor's degree must possess a bachelor's degree received with an academic major or interdisciplinary academic major, including reading, other than education, that is related to the curriculum as prescribed under TEC, Chapter 28, Subchapter A; §21.050(b), which states that the SBEC may not require more than 18 semester credit hours of education courses at the baccalaureate level for the granting of a teaching certificate; §21.050(c), which states that a person who receives a bachelor's degree required for a teaching certificate on the basis of higher education coursework completed while receiving an exemption from tuition and fees under the TEC, §54.214, may not be required to participate in any field experience or internship consisting of student teaching to receive a teaching certificate; and §22.082, which states that the SBEC shall subscribe to the criminal history clearinghouse as provided by the Texas Government Code, §411.0845, and may obtain from any law enforcement or criminal justice agency all criminal history record information and all records contained in any closed criminal investigation file that relate to a specific applicant for or holder of a certificate issued under the TEC, Chapter 21, Subchapter B.

The adopted amendments and new section implement the TEC, §§21.041(b)(2) and (4), 21.044, 21.048, 21.050, and 22.082.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## SUBCHAPTER N. CERTIFICATE ISSUANCE PROCEDURES

### 19 TAC §§230.431 - 230.438

The amendments are adopted under the Texas Education Code (TEC), §21.031(a), which states that the State Board for Educator Certification (SBEC) shall regulate and oversee all aspects

of the certification, continuing education, and standards of conduct of public school educators; §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; §21.041(b)(2), which requires the SBEC to propose rules that specify the classes of educator certificates to be issued, including emergency certificates; §21.041(b)(3), which requires the SBEC to propose rules that specify the period for which each class of educator certificate is valid; §21.041(b)(4), which requires the SBEC to propose rules that specify the requirements for the issuance and renewal of an educator certificate; §21.041(b)(5), which requires the SBEC to propose rules that provide for the issuance of an educator certificate to a person who holds a similar certificate issued by another state or foreign country, subject to the TEC, §21.052; §21.041(b)(9), which requires the SBEC to propose rules that provide for continuing education requirements; §21.041(c), which requires the SBEC to propose a rule adopting a fee for the issuance and maintenance of an educator certificate that is adequate to cover the cost of administration of the TEC, Chapter 21, Subchapter B; §21.048(a), which requires the SBEC to propose rules prescribing comprehensive examinations for each class of certificate issued by the SBEC; §21.048(b), which states that the SBEC may not administer a written examination to determine the competence or level of performance of an educator who has a hearing impairment unless the examination has been field tested to determine its appropriateness, reliability, and validity as applied to, and minimum acceptable performance scores for, persons with hearing impairments; §21.048(c), which states that an educator who has a hearing impairment is exempt from taking a written examination for a period ending on the first anniversary of the date on which the SBEC determines, on the basis of appropriate field tests, that the examination complies with the standards specified in subsection (b) of this section; §21.048(c)(1), which states that the results of an examination administered under this section are confidential and are not subject to disclosure under the Texas Government Code, Chapter 552, unless the disclosure is regarding notification to a parent of the assignment of an uncertified teacher to a classroom as required by the TEC, §21.057, or the educator has failed the examination more than five times; §21.048(d), which states the definitions for hearing impairment, reliability, and validity when used in the TEC, §21.048; §21.050(a), which states that a person who applies for a teaching certificate for which SBEC rules require a bachelor's degree must possess a bachelor's degree received with an academic major or interdisciplinary academic major, including reading, other than education, that is related to the curriculum as prescribed under TEC, Chapter 28, Subchapter A; §21.050(b), which states that the SBEC may not require more than 18 semester credit hours of education courses at the baccalaureate level for the granting of a teaching certificate; §21.050(c), which states that a person who receives a bachelor's degree required for a teaching certificate on the basis of higher education coursework completed while receiving an exemption from tuition and fees under the TEC, §54.214, may not be required to participate in any field experience or internship consisting of student teaching to receive a teaching certificate; §21.054(a), which requires the SBEC to propose rules establishing a process for identifying continuing education courses and programs that fulfill educators' continuing education requirements; §22.082, which states that the SBEC shall subscribe to the criminal history clearinghouse as provided by the Texas Government Code, §411.0845, and may obtain from any law enforcement or criminal justice agency all criminal history record

information and all records contained in any closed criminal investigation file that relate to a specific applicant for or holder of a certificate issued under the TEC, Chapter 21, Subchapter B; and §22.0831(f), which authorizes the SBEC to propose rules to implement the national criminal history record information review of certified educators.

The adopted amendments implement the TEC, §§21.031(a), 21.041(b)(1) - (5) and (9) and (c), 21.048, 21.050, 21.054(a), 22.082, and 22.0831(f).

*§230.432. Candidates of Approved Educator Preparation Programs.*

An appropriate certificate may be issued to a candidate who completes all requirements of a State Board for Educator Certification-approved educator preparation program. The candidate must complete the appropriate application and pay the designated fee. The certification officer representing the approved educator preparation program shall submit to the Texas Education Agency staff a recommendation for the issuance of the appropriate certificate, indicating the date on which all requirements were completed.

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## SUBCHAPTER O. TEXAS EDUCATOR CERTIFICATES BASED ON CERTIFICATION AND COLLEGE CREDENTIALS FROM OTHER STATES OR TERRITORIES OF THE UNITED STATES

### **19 TAC §§230.461 - 230.464**

The amendments are adopted under the Texas Education Code (TEC), §21.040(6), which allows the State Board for Educator Certification (SBEC) authority to develop and implement policies that define responsibilities of the SBEC; §21.041(b)(4), which requires the SBEC to propose rules that specify the requirements for the issuance and renewal of an educator certificate; §21.041(b)(5), which requires the SBEC to propose rules that provide for the issuance of an educator certificate to a person who holds a similar certificate issued by another state or foreign country, subject to the TEC, §21.052; §21.041(c), which requires the SBEC to propose a rule adopting a fee for the issuance and maintenance of an educator certificate that is adequate to cover the cost of administration of the TEC, Chapter 21, Subchapter B; §21.048(a), which requires the SBEC to propose rules prescribing comprehensive examinations for each class of certificate issued by the SBEC; §21.048(b), which states that the SBEC may not administer a written examination to determine the competence or level of performance of an educator who has a hearing impairment unless the examination has been

field tested to determine its appropriateness, reliability, and validity as applied to, and minimum acceptable performance scores for, persons with hearing impairments; §21.048(c), which states that an educator who has a hearing impairment is exempt from taking a written examination for a period ending on the first anniversary of the date on which the SBEC determines, on the basis of appropriate field tests, that the examination complies with the standards specified in subsection (b) of this section; §21.048(c)(1), which states that the results of an examination administered under this section are confidential and are not subject to disclosure under the Texas Government Code, Chapter 552, unless the disclosure is regarding notification to a parent of the assignment of an uncertified teacher to a classroom as required by the TEC, §21.057, or the educator has failed the examination more than five times; §21.048(d), which states the definitions for hearing impairment, reliability, and validity when used in the TEC, §21.048; §21.050(a), which states that a person who applies for a teaching certificate for which SBEC rules require a bachelor's degree must possess a bachelor's degree received with an academic major or interdisciplinary academic major, including reading, other than education, that is related to the curriculum as prescribed under the TEC, Chapter 28, Subchapter A; §21.050(b), which states that the SBEC may not require more than 18 semester credit hours of education courses at the baccalaureate level for the granting of a teaching certificate; §21.050(c), which states that a person who receives a bachelor's degree required for a teaching certificate on the basis of higher education coursework completed while receiving an exemption from tuition and fees under the TEC, §54.214, may not be required to participate in any field experience or internship consisting of student teaching to receive a teaching certificate; §21.052(a), which states that the SBEC may issue a certificate to an educator who holds a degree issued by an institution accredited by a regional accrediting agency or group that is recognized by a nationally recognized accreditation board or a degree issued by an institution located in a foreign country, if the degree is equivalent to a degree described by §21.052(a)(1)(A), holds an appropriate certificate or other credential issued by another state or country, and performs satisfactorily on the examination prescribed under the TEC, §21.048, or, if the educator holds a certificate or other credential issued by another state or country, an examination similar to and at least as rigorous as that described by §21.052(a)(1)(A) administered to the educator under the authority of that state; §21.052(b), which states that for purposes of §21.052(a)(2), a person is considered to hold a certificate or other credential if the credential is not valid solely because it has expired; §21.052(c), which states that the SBEC may issue a temporary certificate under this section to an educator who holds a degree required by §21.052(a)(1) and a certificate or other credential required by §21.052(a)(2) but who has not satisfied the requirements prescribed by §21.052(a)(3); §21.052(d), which states that a temporary certificate issued under §21.052(c) to an educator employed by a school district that has constructed or expanded at least one instructional facility as a result of increased student enrollment due to actions taken under the Defense Base Closure and Realignment Act of 1990 (10 U.S.C. §2687) may not expire before the first anniversary of the date on which the SBEC completes the review of the educator's credentials and informs the educator of the examination or examinations under the TEC, §21.048, on which the educator must perform successfully to receive a standard certificate; and §21.054(a), which requires the SBEC to propose rules establishing a process for identifying continuing education courses

and programs that fulfill educators' continuing education requirements.

The adopted amendments implement the TEC, §§21.040(6), 21.041(b)(4) and (5) and (c), 21.048, 21.050, 21.052, and 21.054(a).

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## SUBCHAPTER P. REQUIREMENTS FOR STANDARD CERTIFICATES AND SPECIALIZED ASSIGNMENTS OR PROGRAMS

### 19 TAC §230.481, §230.484

The repeals are adopted under the Texas Education Code (TEC), §21.031(a), which states that the State Board for Educator Certification (SBEC) shall regulate and oversee all aspects of the certification, continuing education, and standards of conduct of public school educators; §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; §21.041(b)(2), which requires the SBEC to propose rules that specify the classes of educator certificates to be issued, including emergency certificates; and §21.041(b)(3), which requires the SBEC to propose rules that specify the period for which each class of educator certificate is valid.

The adopted repeals implement the TEC, §21.031(a) and §21.041(b)(1) - (3).

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### 19 TAC §§230.481 - 230.483

The new section and amendments are adopted under the Texas Education Code (TEC), §21.031(a), which states that the State

Board for Educator Certification (SBEC) shall regulate and oversee all aspects of the certification, continuing education, and standards of conduct of public school educators; §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; §21.041(b)(2), which requires the SBEC to propose rules that specify the classes of educator certificates to be issued, including emergency certificates; and §21.041(b)(3), which requires the SBEC to propose rules that specify the period for which each class of educator certificate is valid.

The adopted new section and amendments implement the TEC, §21.031(a) and §21.041(b)(1) - (3).

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## SUBCHAPTER Q. PERMITS

### 19 TAC §§230.501 - 230.507, 230.512

The amendments are adopted under the Texas Education Code (TEC), §21.031(a), which states that the State Board for Educator Certification (SBEC) shall regulate and oversee all aspects of the certification, continuing education, and standards of conduct of public school educators; §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; §21.041(b)(2), which requires the SBEC to propose rules that specify the classes of educator certificates to be issued, including emergency certificates; §21.041(b)(4), which requires the SBEC to propose rules that specify the requirements for the issuance and renewal of an educator certificate; §21.044, which authorizes the SBEC to propose rules establishing the training requirements a person must accomplish to obtain a certificate, enter an internship, or enter an induction-year program and specify the minimum academic qualifications required for a certificate; §21.045(a), which authorizes the SBEC to propose rules establishing standards to govern the approval and continuing accountability of all educator preparation programs based on information that is disaggregated with respect to sex and ethnicity and that includes results of the certification examinations prescribed under the TEC, §21.048(a), and performance based on the appraisal system for beginning teachers adopted by the SBEC; §21.045(b), which specifies that each educator preparation program shall submit data elements as required by the SBEC for an annual performance report to ensure access and equity; §21.045(c), which requires the SBEC to propose rules establishing performance standards for the Accountability System for Educator Preparation for accrediting educator prepara-

tion programs; §21.045(d), which specifies that the executive director of the SBEC shall appoint an oversight team of educators to make recommendations and provide assistance to educator preparation programs that do not meet accreditation standards; §21.048(a), which requires the SBEC to propose rules prescribing comprehensive examinations for each class of certificate issued by the SBEC; §21.048(b), which states that the SBEC may not administer a written examination to determine the competence or level of performance of an educator who has a hearing impairment unless the examination has been field tested to determine its appropriateness, reliability, and validity as applied to, and minimum acceptable performance scores for, persons with hearing impairments; §21.048(c), which states that an educator who has a hearing impairment is exempt from taking a written examination for a period ending on the first anniversary of the date on which the SBEC determines, on the basis of appropriate field tests, that the examination complies with the standards specified in subsection (b) of this section; §21.048(c)(1), which states that the results of an examination administered under this section are confidential and are not subject to disclosure under the Texas Government Code, Chapter 552, unless the disclosure is regarding notification to a parent of the assignment of an uncertified teacher to a classroom as required by the TEC, §21.057, or the educator has failed the examination more than five times; §21.048(d), which states the definitions for hearing impairment, reliability, and validity when used in the TEC, §21.048.

The adopted amendments implement the TEC, §§21.031(a), 21.041(b)(1), (2), and (4), 21.044, 21.045, and 21.048.

*§230.504. Specific Requirements for Initial Emergency Permits.*

(a) General Provisions. An individual for whom an emergency permit is activated must:

(1) have completed the appropriate semester credit hours or equivalent contact hours required for the emergency permit sought as specified in this section; or, for a degreed, certified teacher, have passed the appropriate content specialization portions of the appropriate certification examination required for the target certificate; and

(2) have satisfied the appropriate experience requirement specified in this section for the emergency permit sought.

(b) Assignments to elementary grades (Early Childhood-Grade 6) (general education).

(1) Elementary (Early Childhood-Grade 6). The individual must have completed 12 semester credit hours in a combination of subjects directly related to the elementary curriculum, or 12 semester credit hours in elementary education, or any combination of these areas of study. Subjects related to the elementary curriculum include, but are not limited to, art, English language arts, health, mathematics, music, physical education, reading, science, social studies, technology applications, or theatre arts.

(2) Foreign language in the elementary grades (Early Childhood-Grade 6).

(A) An individual must have current certification with a teaching field in the language to be taught.

(B) An individual who holds a secondary certificate with a teaching field in the language to be taught must have completed six semester credit hours of elementary education before the assignment is continued.

(C) Continued assignment must be documented on the individual's teacher service record.

(D) An individual who holds a Generalist: Early Childhood-Grade 4 or Generalist: Early Childhood-Grade 6 certificate with a passing score on the appropriate oral proficiency test in the target language may qualify for an emergency permit. To continue in the assignment, the individual must pass the written content specialization portion of the certification examination.

(E) Requirements specified in §230.506 of this title (relating to Renewal Requirements) do not apply to this assignment.

(c) Assignments to secondary grades (Grades 7-12) (general education).

(1) An emergency permit may be activated for an individual not certified at the secondary level provided the individual has completed:

(A) 24 semester credit hours in the subject to be taught; or

(B) 24 semester credit hours toward a composite teaching field appropriate for the assignment, including at least six semester credit hours in the subject to be taught.

(2) A Temporary Classroom Assignment Permit (TCAP) may be activated for a teacher certified at the secondary level assigned to a subject area not covered by the certificate. The school district is not required to file the TCAP with the Texas Education Agency staff. The TCAP must be maintained in the school district personnel records.

(A) A TCAP must be activated for an individual who is assigned to one or more class periods in an area not covered by the certificate held. The individual must have completed six semester credit hours in the specific subject area(s) to be taught. A TCAP may be activated for no more than four class periods.

(B) The TCAP is valid for one school year and is not renewable except in the event that the TCAP was issued for fewer than 90 calendar days before the last day of student instruction in the prior school year.

(d) Assignments to all grade levels (Early Childhood-Grade 12) (general education).

(1) An individual must have completed 24 semester credit hours in the subject area to be taught.

(2) This section will apply to all general education subject areas that are available as Early Childhood-Grade 12 certificates.

(e) Assignments to career and technical education programs.

(1) Agricultural science and technology assignments. An individual must:

(A) hold a baccalaureate degree from an accredited institution of higher education; and

(B) have completed 24 semester credit hours in agricultural science and technology coursework.

(2) Health science technology assignments. An individual must:

(A) hold a baccalaureate degree from an accredited institution of higher education;

(B) be currently licensed, certified, or registered (requiring two years of college education) by a state-authorized or nationally recognized accrediting agency as a professional practitioner in one or more health occupations for which instruction is offered; and

(C) have an approved statement of qualifications verifying two years of full-time employment in an accredited health care

facility or agency while holding the license mentioned in subparagraph (B) of this paragraph.

(3) Family and consumer sciences assignments. An individual must:

(A) hold a baccalaureate degree from an accredited institution of higher education; and

(B) have completed 24 semester credit hours in family and consumer sciences coursework.

(4) Marketing education assignments. An individual must:

(A) hold a baccalaureate degree from an accredited institution of higher education;

(B) have completed 24 semester credit hours in marketing coursework; and

(C) have an approved statement of qualifications verifying two years of full-time wage-earning experience in marketing occupations for which training is offered at the secondary level.

(5) Business education assignments (for any instructional arrangement). An individual must:

(A) hold a baccalaureate degree from an accredited institution of higher education; and

(B) have completed 24 semester credit hours in business coursework.

(6) Trade and industrial education assignments.

(A) Option I. An individual must:

(i) hold a baccalaureate degree from an accredited institution of higher education; and

(ii) have an approved statement of qualifications verifying three years of full-time wage-earning experience earned within the past eight years in one or more approved occupations for which instruction is offered. Up to 18 months of the wage-earning experience can be met through a formal documented internship.

(B) Option II. An individual must:

(i) hold an associate degree from an accredited institution of higher education; and

(ii) have an approved statement of qualifications verifying three years of full-time wage-earning experience earned within the past eight years in one or more approved occupations for which instruction is offered.

(C) Option III. An individual must:

(i) hold a high school diploma or the equivalent; and

(ii) have an approved statement of qualifications verifying five years of full-time wage-earning experience earned within the past eight years in one or more approved occupations for which instruction is offered.

(D) Additional requirements.

(i) Current licensure, certification, or registration by a state or nationally recognized accrediting agency as a professional practitioner in one or more approved occupations for which instruction is offered. Licensure, certification, or registration by a nationally recognized accrediting agency must be based on a recognized test or measurement. If the license, certification, or registration is not based on a recognized test or measurement, then passing of the appropriate

National Occupational Competency Testing (NOCTI) assessment is required.

(ii) A cosmetology teacher must:

(I) have three years of full-time wage-earning experience as a licensed cosmetologist; and

(II) currently be licensed as a cosmetology instructor by the Texas Department of Licensing and Regulation.

(iii) Wage-earning experience must be approved by the certification officer of the educator preparation program.

(f) Assignments for special populations.

(1) English language learners (ELLs).

(A) Bilingual education.

(i) An individual who holds a baccalaureate degree from an accredited institution of higher education and is certified at the appropriate level must:

(I) have completed three semester credit hours in an approved bilingual education program; and

(II) have completed six semester credit hours in the language of the target population; or have demonstrated proficiency in oral communication skills in the language of the target population by achieving a score of "intermediate mid" (level 2) or higher on the Texas Oral Proficiency Test (TOPT) or a comparable score on a state-approved examination of oral proficiency.

(ii) An individual who holds a baccalaureate degree from an accredited institution of higher education, but is not certified must:

(I) meet the requirements for the level of assignment;

(II) be currently enrolled in an approved educator preparation program for bilingual education; and

(III) have satisfied one of the following requirements:

(-a-) have completed 12 semester credit hours in the language of the target population, bilingual education, or a combination of the two subject areas; or

(-b-) have demonstrated proficiency in oral communication skills in the language of the target population by achieving a score of "intermediate mid" (level 2) or higher on the TOPT or a comparable score on a state-approved examination of oral proficiency.

(B) English as a second language (ESL). An individual must:

(i) be currently certified for the grade level based on a baccalaureate degree from an accredited institution of higher education; and

(ii) have satisfied one of the following requirements:

(I) have completed six semester credit hours in an approved ESL program; or

(II) have one creditable year of classroom teaching experience, as defined in Chapter 153, Subchapter CC, of this title (relating to Commissioner's Rules on Creditable Years of Service).

(2) Students with special learning needs.

(A) Auditory impairments. An individual must:

(i) hold a baccalaureate degree from an accredited institution of higher education;

(ii) have completed six semester credit hours directly related to teaching the hearing impaired;

(iii) have demonstrated competence in the specific communication method used in the classroom setting with students who are deaf; and

(iv) have verified that the employing school district, cooperative, or education service center (ESC) has one or more fully certified teachers for students with auditory impairments available as a mentor and to provide support.

(B) Visual impairments. An individual must:

(i) be currently certified in elementary, secondary, or special education;

(ii) have satisfied one of the following requirements:

(I) have completed six semester credit hours directly related to teaching students with visual impairments; or

(II) have one creditable year of classroom teaching experience, as defined in Chapter 153, Subchapter CC, of this title;

(iii) have demonstrated competency in literary Braille and basic Nemeth Code by passing the approved Braille examination, holding certification as a literary Braille transcriber by the Library of Congress, or completing one university course in Braille; and

(iv) have verified that the employing school district, cooperative, or ESC has one or more fully certified teachers of students with visual impairments available as a mentor and to provide support.

(C) Home-based instruction or instruction in a hospital class. An individual must:

(i) be currently certified based on a baccalaureate degree from an accredited institution of higher education; and

(ii) have one creditable year of teaching experience, as defined in Chapter 153, Subchapter CC, of this title.

(D) Special education (Early Childhood-Grade 12).

(i) An individual who holds a baccalaureate degree from an accredited institution of higher education and is certified at the appropriate level must:

(I) have completed six semester credit hours directly related to teaching children with special learning needs; or

(II) have one creditable year of classroom teaching experience, as defined in Chapter 153, Subchapter CC, of this title.

(ii) An individual who holds a baccalaureate degree from an accredited institution of higher education, but is not certified must:

(I) for elementary assignments, meet requirements for the level of assignment as stated in subsection (b) of this section and have completed 18 semester credit hours directly related to teaching children with special learning needs; or

(II) for secondary assignments, have completed 24 semester credit hours directly related to teaching children with special learning needs.

(g) Assignments for other instructional and support personnel.

(1) School Counselor (Early Childhood-Grade 12). An individual must:

(A) hold a baccalaureate degree from an accredited institution of higher education;

(B) have completed 24 semester credit hours of graduate-level credit, including 12 semester credit hours in guidance and counseling; and

(C) have two creditable years of classroom teaching experience, as defined in Chapter 153, Subchapter CC, of this title.

(2) Educational Diagnostician (Early Childhood-Grade 12). An individual must:

(A) hold a baccalaureate degree from an accredited institution of higher education;

(B) have completed 30 semester credit hours of graduate-level credit in the field of education or a related field, including six semester credit hours in tests and measurements, at least three semester credit hours of which emphasized individualized testing;

(C) have completed six semester credit hours directly related to teaching individuals with special learning needs; and

(D) have two creditable years of classroom teaching experience, as defined in Chapter 153, Subchapter CC, of this title.

(3) School Librarian (Early Childhood-Grade 12). An individual must:

(A) hold a baccalaureate degree from an accredited institution of higher education;

(B) have completed six semester credit hours directly related to the basic competencies required of school librarians; and

(C) have two creditable years of classroom teaching experience, as defined in Chapter 153, Subchapter CC, of this title.

(4) Reserve Officers' Training Corps (ROTC) instructor.

(A) An individual must verify that he or she has satisfied the requirements and been approved to serve by the ROTC.

(B) Requirements specified in §230.506 of this title (relating to Renewal Requirements) do not apply to this assignment.

(C) Continued assignment must be documented on the individual's teacher service record.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## SUBCHAPTER Q. PERMITS

19 TAC §§230.509 - 230.511

The repeals are adopted under the Texas Education Code (TEC), §21.031(a), which states that the State Board for Educator Certification (SBEC) shall regulate and oversee all aspects of the certification, continuing education, and standards of conduct of public school educators; §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; §21.041(b)(2), which requires the SBEC to propose rules that specify the classes of educator certificates to be issued, including emergency certificates; §21.041(b)(4), which requires the SBEC to propose rules that specify the requirements for the issuance and renewal of an educator certificate; §21.044, which authorizes the SBEC to propose rules establishing the training requirements a person must accomplish to obtain a certificate, enter an internship, or enter an induction-year program and specify the minimum academic qualifications required for a certificate; §21.045(a), which authorizes the SBEC to propose rules establishing standards to govern the approval and continuing accountability of all educator preparation programs based on information that is disaggregated with respect to sex and ethnicity and that includes results of the certification examinations prescribed under the TEC, §21.048(a), and performance based on the appraisal system for beginning teachers adopted by the SBEC; §21.045(b), which specifies that each educator preparation program shall submit data elements as required by the SBEC for an annual performance report to ensure access and equity; §21.045(c), which requires the SBEC to propose rules establishing performance standards for the Accountability System for Educator Preparation for accrediting educator preparation programs; §21.045(d), which specifies that the executive director of the SBEC shall appoint an oversight team of educators to make recommendations and provide assistance to educator preparation programs that do not meet accreditation standards; §21.048(a), which requires the SBEC to propose rules prescribing comprehensive examinations for each class of certificate issued by the SBEC; §21.048(b), which states that the SBEC may not administer a written examination to determine the competence or level of performance of an educator who has a hearing impairment unless the examination has been field tested to determine its appropriateness, reliability, and validity as applied to, and minimum acceptable performance scores for, persons with hearing impairments; §21.048(c), which states that an educator who has a hearing impairment is exempt from taking a written examination for a period ending on the first anniversary of the date on which the SBEC determines, on the basis of appropriate field tests, that the examination complies with the standards specified in subsection (b) of this section; §21.048(c)(1), which states that the results of an examination administered under this section are confidential and are not subject to disclosure under the Texas Government Code, Chapter 552, unless the disclosure is regarding notification to a parent of the assignment of an uncertified teacher to a classroom as required by the TEC, §21.057, or the educator has failed the examination more than five times; §21.048(d), which states the definitions for hearing impairment, reliability, and validity when used in the TEC, §21.048.

The adopted repeals implement the TEC, §§21.031(a), 21.041(b)(1), (2), and (4), 21.044, 21.045, and 21.048.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.



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## SUBCHAPTER S. EDUCATIONAL AIDE CERTIFICATE

### 19 TAC §§230.551 - 230.555, 230.559, 230.560

The amendments are adopted under the Texas Education Code (TEC), §21.041(a), which allows the State Board for Educator Certification (SBEC) to adopt rules as necessary for its own procedures; §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; §21.041(b)(2), which requires the SBEC to propose rules that specify the classes of educator certificates to be issued, including emergency certificates; §21.041(b)(3), which requires the SBEC to propose rules that specify the period for which each class of educator certificate is valid; and §21.041(b)(4), which requires the SBEC to propose rules that specify the requirements for the issuance and renewal of an educator certificate.

The adopted amendments implement the TEC, §21.041(a) and (b)(1) - (4).

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## SUBCHAPTER U. ASSIGNMENT OF PUBLIC SCHOOL PERSONNEL

### 19 TAC §230.601

The repeal is adopted under the Texas Education Code (TEC), §21.041(b)(1), which requires the State Board for Educator Certification (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 §21.041(b)(2), which requires the SBEC to propose rules that specify the classes of educator certificates to be issued, including emergency certificates.

The adopted repeal implements the TEC, §21.041(b)(1) and (2).

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## SUBCHAPTER V. INDUCTION TRAINING FOR BEGINNING TEACHERS

### 19 TAC §230.610

The amendment is adopted under the Texas Education Code (TEC), §21.044, which authorizes the State Board for Educator Certification to propose rules establishing the training requirements a person must accomplish to obtain a certificate, enter an internship, or enter an induction-year program and specify the minimum academic qualifications required for a certificate.

The adopted amendment implements the TEC, §21.044.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## SUBCHAPTER Y. DEFINITIONS

### 19 TAC §230.801

The repeal is adopted under the Texas Education Code (TEC), §21.041(b)(1), which requires the State Board for Educator Certification (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 §21.041(b)(2), which requires the SBEC to propose rules that specify the classes of educator certificates to be issued, including emergency certificates.

The adopted repeal implements the TEC, §21.041(b)(1) and (2).

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## CHAPTER 231. ASSIGNMENT OF PUBLIC SCHOOL PERSONNEL

### 19 TAC §231.1

The State Board for Educator Certification (SBEC) adopts new §231.1, concerning provisions for assignment of public school personnel. The new section is adopted without changes to the proposed text as published in the February 27, 2009, issue of the *Texas Register* (34 TexReg 1362) and will not be republished. The adopted new section provides guidance to school districts with regard to the certificates required for specific assignments of public school educators. The adopted new section includes language from 19 TAC §230.601, which has been repealed as part of the revisions to 19 TAC Chapter 230.

The adopted new 19 TAC §231.1 specifies the criteria for assignment of public school personnel and adopts in rule a figure showing a list of assignments with corresponding certificates for each assignment. The adopted new section includes language currently in 19 TAC §230.601, which has been repealed and re-organized in new 19 TAC §231.1.

The figure adopted in §231.1(e) is organized into three parts. Part I includes the requirements for assignment of teachers. Part II includes the requirements for teachers certified before 1966 and assigned to Grades 6-12. Part III includes the requirements for assignment of administrators, other instructional and professional support personnel, special education related services personnel, and paraprofessional personnel.

The adopted new section has no procedural and reporting implications. Also, the adopted new section does not include any additional locally maintained paperwork requirements.

There is no direct adverse economic impact for small businesses and microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Following the February 2009 SBEC meeting, proposed new 19 TAC §231.1 was filed with the Texas Register initiating the official public comment period. No comments were received regarding the proposed new section.

The State Board of Education (SBOE) took no action on the review of new 19 TAC §231.1 at the May 22, 2009, SBOE meeting.

The new section is adopted under the TEC, §21.031(a), which states that the SBEC shall regulate and oversee all aspects of the certification, continuing education, and standards of conduct of public school educators; §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 §21.041(b)(2), which requires the SBEC to

propose rules that specify the classes of educator certificates to be issued, including emergency certificates.

The adopted new section implements the TEC, §21.031(a) and §21.041(b)(1) and (2).

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## CHAPTER 232. GENERAL CERTIFICATION PROVISIONS

### SUBCHAPTER B. CERTIFICATE RENEWAL AND CONTINUING PROFESSIONAL EDUCATION REQUIREMENTS

#### 19 TAC §232.830

The State Board for Educator Certification (SBEC) adopts an amendment to §232.830, concerning certificate renewal and continuing professional education requirements. The amendment to §232.830 is adopted without changes to the proposed text as published in the February 27, 2009, issue of the *Texas Register* (34 TexReg 1363) and will not be republished. The adopted amendment is necessary to update the current rule to reflect the section title change for 19 TAC §249.16.

The Texas Education Code (TEC), §21.041(b)(7) and (8), authorize the SBEC to adopt rules providing for disciplinary proceedings and enforcing the educator's code of ethics.

At the July 2007 SBEC meeting, the SBEC requested that an amendment to 19 TAC §249.16 be pulled from the proposed rule changes to 19 TAC Chapter 249 for filing with the Texas Register so that an Attorney General's opinion could be requested regarding the meaning of the TEC, §21.060, added by Senate Bill 9, 80th Texas Legislature, 2007. The question submitted to the Attorney General was whether the adopted amendment to 19 TAC §249.16 will be in conflict with the TEC, §21.060. Subsequently, the Attorney General issued Opinion No. GA-0614 ruling that the list of crimes deemed to be related to the duties and responsibilities of the education profession is nonexclusive in the TEC, §21.060. Therefore, the SBEC has the authority, pursuant to the Texas Occupations Code, §53.025, to list crimes other than those listed in the TEC, §21.060, as being related to the duties and responsibilities of the education profession. As a result, the SBEC adopts the following amendment to 19 TAC §232.830.

A technical edit was made to §232.830 updating the reference to the adopted section title change for 19 TAC §249.16. The adopted amendment to 19 TAC §249.16 can be found in the Adopted Rules section of this issue.

The adopted amendment has no procedural and reporting implications. Also, the adopted amendment does not include any additional locally maintained paperwork requirements.

There is no direct adverse economic impact for small businesses and microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Following the February 2009 SBEC meeting, the proposed amendment to 19 TAC §232.830 was filed with the Texas Register initiating the official public comment period. No comments were received regarding the proposed amendment.

The State Board of Education (SBOE) took no action on the review of the amendment to 19 TAC §232.830 at the May 22, 2009, SBOE meeting.

The amendment is adopted under the TEC, §21.041(b)(7), which requires the SBEC to propose rules that provide for disciplinary proceedings, including the suspension or revocation of an educator certificate, as provided by Texas Government Code, Chapter 2001; and §21.041(b)(8), which requires the SBEC to propose rules that provide for the enforcement of an educator's code of ethics.

The adopted amendment implements the TEC, §21.041(b)(7) and (8).

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## CHAPTER 233. CATEGORIES OF CLASSROOM TEACHING CERTIFICATES

### 19 TAC §§233.2, 233.4, 233.6, 233.7, 233.12, 233.14

The State Board for Educator Certification (SBEC) adopts amendments to §§233.2, 233.4, 233.6, 233.7, 233.12, and 233.14, concerning categories of classroom teaching certificates. The amendments to §§233.2, 233.4, 233.6, 233.7, 233.12, and 233.14 are adopted without changes to the proposed text as published in the February 27, 2009, issue of the *Texas Register* (34 TexReg 1364) and will not be republished. The adopted amendments update the rules establishing a deadline of September 1, 2011, for issuing the Generalist: Early Childhood-Grade 4 certificate, the Bilingual Generalist: Early Childhood-Grade 4 certificate, the Bilingual Education Supplemental: Early Childhood-Grade 4 certificate, the Bilingual Education Supplemental: Grades 4-8 certificate, and the English as a Second Language Generalist: Early Childhood-Grade 4 certificate. Language was also amended to include a Bilingual Education Supplemental certificate and clarify the specific as-

signment eligibility for the holder of a mathematics and science certificate.

The Texas Education Code (TEC), §21.003(a), states that a person may not be employed as a teacher, teacher intern or teacher trainee, librarian, educational aide, administrator, educational diagnostician, or counselor by a school district unless the person holds an appropriate certificate or permit issued as provided by the TEC, Chapter 21, Subchapter B. The TEC, §21.031(b), states that in proposing rules under the TEC, Chapter 21, Subchapter B, the SBEC shall ensure that all candidates for certification or renewal of certification demonstrate the knowledge and skills necessary to improve the performance of the diverse student population of the state.

The SBEC determined that expiration dates for some certificates was needed as a result of the implementation of the new Generalist Early Childhood-Grade 6 certificates. In addition, adding all physics and chemistry courses as acceptable assignments for holders of the Mathematics/Physical Science/Engineering: Grades 8-12 certificate was necessary due to changes in the certification examination. Specifically, the following changes to rules are adopted.

In 19 TAC §233.2, language was added specifying an end date of September 1, 2011, for the Generalist: Early Childhood-Grade 4 certificate in subsection (a).

In 19 TAC §233.4(i), language was amended allowing the holder of the Mathematics/Physical Science/Engineering: Grades 8-12 certificate to teach all physics and chemistry courses. The Texas Education Agency staff reviewed and determined that the certification examination incorporated sufficient test items in the areas of physics and chemistry to justify the addition of these assignments.

In 19 TAC §233.6, language was added specifying an end date of September 1, 2011, for the Bilingual Generalist: Early Childhood-Grade 4 certificate in subsection (a), for the Bilingual Education Supplemental: Early Childhood-Grade 4 certificate in subsection (d), and for the Bilingual Education Supplemental: Grades 4-8 certificate in subsection (e). Adopted new subsection (f) was added to include the new Bilingual Education Supplemental certificate. A holder of the Bilingual Education Supplemental certificate teaches in a bilingual or English as a second language program at the same grade levels and in the content area(s) of the holder's base certificate.

In 19 TAC §233.7, language was added specifying an end date of September 1, 2011, for the English as a Second Language Generalist: Early Childhood-Grade 4 certificate in subsection (a).

In 19 TAC §233.12 and §233.14, technical changes were made such as the phrase "career and technology" was replaced with "career and technical." Also in §233.14, the cross reference to 19 TAC §230.483 was updated due to adopted changes in 19 TAC Chapter 230. The adopted amendment to 19 TAC §230.483 can be found in the Adopted Rules section of this issue.

The adopted amendments have no procedural and reporting implications. Also, the adopted amendments do not include any additional locally maintained paperwork requirements.

There is no direct adverse economic impact for small businesses and microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Following the February 2009 SBEC meeting, the proposed amendments to 19 TAC §§233.2, 233.4, 233.6, 233.7, 233.12, and 233.14 were filed with the Texas Register initiating the official public comment period. No comments were received regarding the proposed amendments.

The State Board of Education (SBOE) took no action on the review of the amendments to 19 TAC §§233.2, 233.4, 233.6, 233.7, 233.12, and 233.14 at the May 22, 2009, SBOE meeting.

The amendments are adopted under the TEC, §21.003(a), which states that a person may not be employed as a teacher, teacher intern or teacher trainee, librarian, educational aide, administrator, educational diagnostician, or counselor by a school district unless the person holds an appropriate certificate or permit issued as provided by the TEC, Chapter 21, Subchapter B; §21.031, which authorizes the SBEC to regulate and oversee all aspects of the certification, continuing education, and standards of conduct of public school educators, and states that in proposing rules under the TEC, Chapter 21, Subchapter B, the SBEC shall ensure that all candidates for certification or renewal of certification demonstrate the knowledge and skills necessary to improve the performance of the diverse student population of this state; §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; §21.041(b)(2), which requires the SBEC to propose rules that specify the classes of educator certificates to be issued, including emergency certificates; §21.041(b)(3), which requires the SBEC to propose rules that specify the period for which each class of educator certificate is valid; §21.041(b)(4), which requires the SBEC to propose rules that specify the requirements for the issuance and renewal of an educator certificate; §21.041(b)(6), which requires the SBEC to propose rules that provide for special or restricted certification of educators, including certification of instructors of American Sign Language; §21.048(a), which specifies that the board shall propose rules prescribing comprehensive examinations for each class of certificate issued by the board; §21.050(a), which specifies that a person who applies for a teaching certificate for which SBEC rules require a bachelor's degree must possess a bachelor's degree received with an academic major or interdisciplinary academic major, including reading, other than education, that is related to the curriculum as prescribed under the TEC, Chapter 28, Subchapter A; §21.050(b), which states that the board may not require more than 18 semester credit hours of education courses at the baccalaureate level for the granting of a teaching certificate. The board shall provide for a minimum number of semester credit hours of internship to be included in the hours needed for certification. The board may propose rules requiring additional credit hours for certification in bilingual education, English as a second language, early childhood education, or special education; §21.050(c), which states that a person who receives a bachelor's degree required for a teaching certificate on the basis of higher education coursework completed while receiving an exemption from tuition and fees under the TEC, §54.214, may not be required to participate in any field experience or internship consisting of student teaching to receive a teaching certificate; and §22.0831(f), which states that the board may propose rules to implement this section, including rules establishing deadlines for a person to submit fingerprints and photographs in compliance with this section and sanctions for a person's failure to comply with the requirements of this section, including suspension or revocation of a certificate or refusal to issue a certificate.

The adopted amendments implement the TEC, §§21.003(a), 21.031, 21.041(b)(1) - (4) and (6), 21.048(a), 21.050, and 22.0831(f).

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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## CHAPTER 249. DISCIPLINARY PROCEEDINGS, SANCTIONS, AND CONTESTED CASES

The State Board for Educator Certification (SBEC) adopts amendments to §§249.3, 249.15, and 249.16, concerning disciplinary proceedings, sanctions, and contested cases. The amendments to §249.3 and §249.15 are adopted without changes to the proposed text as published in the February 27, 2009, issue of the *Texas Register* (34 TexReg 1367) and will not be republished. The amendment to §249.16 is adopted with changes to the proposed text published in the February 27, 2009, issue. The adopted amendments update the rules to reflect current law and delineate crimes other than those listed in the Texas Education Code (TEC), §21.060, as being related to the duties and responsibilities of the education profession. The adopted amendments also reflect the adopted section title for 19 TAC §249.16.

The Texas Education Code (TEC), §21.041(b)(7) and (8), authorize the SBEC to adopt rules providing for disciplinary proceedings and enforcing the educator's code of ethics.

At the July 2007 SBEC meeting, the SBEC requested that an amendment to 19 TAC §249.16 be pulled from the proposed rule changes to 19 TAC Chapter 249 for filing with the Texas Register so that an Attorney General's opinion could be requested regarding the meaning of the TEC, §21.060, added by Senate Bill 9, 80th Texas Legislature, 2007. The question submitted to the Attorney General was whether the adopted amendment to 19 TAC §249.16 will be in conflict with the TEC, §21.060. Subsequently, the Attorney General issued Opinion No. GA-0614 ruling that the list of crimes deemed to be related to the duties and responsibilities of the education profession is nonexclusive in the TEC, §21.060. Therefore, the SBEC has the authority, pursuant to the Texas Occupations Code, §53.025, to list crimes other than those listed in the TEC, §21.060, as being related to the duties and responsibilities of the education profession. As a result, the SBEC adopts the following changes to 19 TAC §§249.3, 249.15, and 249.16. The changes are similar to the changes originally presented to the SBEC in July 2007, with the exception of an additional change in §249.16(b)(3) to include only felony possession of or conspiracy to possess illegal drugs while retaining the inclusion of all convictions for transfer, sale, or distribution of illegal drugs.

In §249.16(b)(7), the standard for alcohol-related crimes and crimes that relate to the teaching professional was revised to include felony driving while intoxicated (DWI), rather than the previous standard which focused on two or more offenses within any 12-month period. Since published as proposed, language in §249.16(b)(7) was modified further to eliminate the provision for felony driving under the influence after it was determined by Texas Education Agency (TEA) staff that the provision was not applicable under Texas criminal law.

In §249.16, language was added in adopted new subsection (d) to state that the remedies found in the TEC, §21.060, added by Senate Bill 9, 80th Texas Legislature, 2007, are cumulative with the remedies found in the Texas Occupations Code, Chapter 53. Both provisions apply to criminal acts committed by certificate holders.

In §249.16, grammatical and technical changes were also made such as the replacement of the terms "Agency" and "executive director" with the term "TEA staff" and the replacement of the term "Board" with the term "State Board for Educator Certification." Also, statutory citation references were updated and standardized to reflect current law and Texas Register formatting requirements. Technical edits were also made to §249.3 and §249.15 to update references to the adopted section title for 19 TAC §249.16, as well as statutory citations.

The procedural and reporting implications of the adopted amendments modify the current process for resolving ethical disputes, resulting in a more efficient resolution process. The adopted amendments do not include any additional locally maintained paperwork requirements.

There is no direct adverse economic impact for small businesses and microbusinesses; therefore, no regulatory flexibility analysis, specified in Texas Government Code, §2006.002, is required.

Following the February 2009 SBEC meeting, the proposed amendments to 19 TAC §§249.3, 249.15, and 249.16 were filed with the Texas Register initiating the official public comment period. No comments were received regarding the proposed amendments.

The State Board of Education (SBOE) took no action on the review of the amendments to 19 TAC §§249.3, 249.15, and 249.16 at the May 22, 2009, SBOE meeting.

## SUBCHAPTER A. GENERAL PROVISIONS

### 19 TAC §249.3

The amendment is adopted under the Texas Education Code (TEC), §21.041(b)(7), which requires the SBEC to propose rules that provide for disciplinary proceedings, including the suspension or revocation of an educator certificate, as provided by Texas Government Code, Chapter 2001; §21.041(b)(8), which requires the SBEC to propose rules that provide for the enforcement of an educator's code of ethics; §21.060, which allows the SBEC to suspend or revoke educator certificates based on the eligibility of persons convicted of certain offenses; Texas Occupations Code, §53.021(a), which states that a licensing authority may suspend or revoke a license, disqualify a person from receiving a license, or deny to a person the opportunity to take a licensing examination on the grounds that the person has been convicted of a felony or misdemeanor that directly relates to the duties and responsibilities of the licensed occupation; and §53.025, which requires the SBEC to issue guidelines to state the reasons a particular crime is considered

to relate to educator certification and any other criterion that affects the decisions of the SBEC.

The adopted amendment implements the TEC, §21.041(b)(7) and (8) and §21.060; and Texas Occupations Code, §53.021(a) and §53.025.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902178

Jerel Booker

Associate Commissioner, Educator Quality and Standards, Texas Education Agency

State Board for Educator Certification

Effective date: June 21, 2009

Proposal publication date: February 27, 2009

For further information, please call: (512) 475-1497

## SUBCHAPTER B. ENFORCEMENT ACTIONS AND GUIDELINES

### 19 TAC §249.15, §249.16

The amendments are adopted under the Texas Education Code (TEC), §21.041(b)(7), which requires the SBEC to propose rules that provide for disciplinary proceedings, including the suspension or revocation of an educator certificate, as provided by Texas Government Code, Chapter 2001; §21.041(b)(8), which requires the SBEC to propose rules that provide for the enforcement of an educator's code of ethics; §21.060, which allows the SBEC to suspend or revoke educator certificates based on the eligibility of persons convicted of certain offenses; Texas Occupations Code, §53.021(a), which states that a licensing authority may suspend or revoke a license, disqualify a person from receiving a license, or deny to a person the opportunity to take a licensing examination on the grounds that the person has been convicted of a felony or misdemeanor that directly relates to the duties and responsibilities of the licensed occupation; and §53.025, which requires the SBEC to issue guidelines to state the reasons a particular crime is considered to relate to educator certification and any other criterion that affects the decisions of the SBEC.

The adopted amendments implement the TEC, §21.041(b)(7) and (8) and §21.060; and Texas Occupations Code, §53.021(a) and §53.025.

*§249.16. Eligibility of Persons with Criminal Convictions for a Certificate under Texas Occupations Code, Chapter 53.*

(a) Pursuant to the Texas Occupations Code, Chapter 53, and the Texas Education Code (TEC), Chapter 22, Subchapter C, the State Board for Educator Certification may suspend or revoke an existing valid certificate, deny an applicant a certificate, or bar a person from being assessed or examined for a certificate because of a person's conviction of a felony or misdemeanor if the crime directly relates to the duties and responsibilities of the education profession.

(b) Subsection (a) of this section applies to a crime that indicates a threat to the health, safety, or welfare of a student or minor, parent of a student, fellow employee, or professional colleague; interferes with the orderly, efficient, or safe operation of a school district, campus, or activity; or indicates impaired ability or misrepresentation of

qualifications to perform the functions of an educator. Crimes considered to relate directly to the duties and responsibilities of the education profession include, but are not limited to:

- (1) crimes involving moral turpitude;
- (2) crimes involving any form of sexual or physical abuse or neglect of a student or minor or other illegal conduct with a student or minor;
- (3) crimes involving any felony possession or conspiracy to possess, or any misdemeanor or felony transfer, sale, distribution, or conspiracy to transfer, sell, or distribute any controlled substance defined in the Texas Health and Safety Code, Chapter 481;
- (4) crimes involving school property or funds;
- (5) crimes involving any attempt by fraudulent or unauthorized means to obtain or alter any certificate or permit that would entitle any person to hold or obtain a position as an educator;
- (6) crimes occurring wholly or in part on school property or at a school-sponsored activity; or
- (7) felonies involving driving while intoxicated (DWI).

(c) Pursuant to the Texas Occupations Code, Chapter 53, the Texas Education Agency (TEA) staff shall notify the applicant or certificate holder in writing of the TEA staff's intent to seek disciplinary action, including denial or revocation, and the reasons for the proposed action. The applicant or certificate holder shall have the opportunity to be heard according to the procedures set forth in this chapter.

(d) The grounds for revoking or suspending a certificate provided by this section and the Texas Occupations Code, Chapter 53, are cumulative of the other grounds and remedies provided by the TEC, §21.060, and this chapter.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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State Board for Educator Certification

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## **TITLE 22. EXAMINING BOARDS**

### **PART 1. TEXAS BOARD OF ARCHITECTURAL EXAMINERS**

#### **CHAPTER 1. ARCHITECTS**

##### **SUBCHAPTER A. SCOPE; DEFINITIONS**

###### **22 TAC §1.5**

The Texas Board of Architectural Examiners (board) adopts an amendment to §1.5 of Chapter 1, Subchapter A, pertaining to defined terms. The amendment is adopted without changes to

the text as proposed in the May 1, 2009, issue of the *Texas Register* (34 TexReg 2667).

The purpose of the amendment is to more accurately reflect a construction document as a document prepared by a design professional, though not necessarily one issued by an architect, to conform to board rules which apply to construction documents that have not been issued by an architect.

No comments were received regarding adoption of the amendments.

The amendment is adopted pursuant to §1051.202, Texas Occupations Code Annotated which provides the Texas Board of Architectural Examiners with authority to promulgate rules necessary to enforce laws within the agency's jurisdiction.

The amendment does not affect any other statutes.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on June 1, 2009.

TRD-200902109

Cathy L. Hendricks

Executive Director

Texas Board of Architectural Examiners

Effective date: June 21, 2009

Proposal publication date: May 1, 2009

For further information, please call: (512) 305-8544



## **CHAPTER 3. LANDSCAPE ARCHITECTS**

### **SUBCHAPTER A. SCOPE; DEFINITIONS**

#### **22 TAC §3.5**

The Texas Board of Architectural Examiners (board) adopts an amendment to §3.5 of Chapter 3, Subchapter A, pertaining to defined terms. The amendment is adopted without changes to the text as proposed in the May 1, 2009, issue of the *Texas Register* (34 TexReg 2667).

The purpose of the amendment is to more accurately reflect a construction document as a document prepared by a design professional, though not necessarily one issued by a landscape architect, to conform to board rules which apply to construction documents that have not been issued by a landscape architect.

No comments were received regarding adoption of the amendments.

The amendment is adopted pursuant to §1051.202, Texas Occupations Code Annotated which provides the Texas Board of Architectural Examiners with authority to promulgate rules necessary to enforce laws within the agency's jurisdiction.

The amendment does not affect any other statutes.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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TRD-200902110

Cathy L. Hendricks  
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Texas Board of Architectural Examiners  
Effective date: June 21, 2009  
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## CHAPTER 5. INTERIOR DESIGNERS

### SUBCHAPTER A. SCOPE; DEFINITIONS

#### 22 TAC §5.5

The Texas Board of Architectural Examiners adopts an amendment to §5.5 of Chapter 5, Subchapter A, pertaining to defined terms. The amendment is adopted without changes to the text as proposed in the May 1, 2009, issue of the *Texas Register* (34 TexReg 2668).

The purpose of the amendment is to more accurately reflect a construction document as a document prepared by a design professional, though not necessarily one issued by an interior designer, to conform to board rules which apply to construction documents that have not been issued by an interior designer.

No comments were received regarding adoption of the amendments.

The amendment is adopted pursuant to Section 1051.202, Texas Occupations Code Annotated, which provides the Texas Board of Architectural Examiners with authority to promulgate rules necessary to enforce laws within the agency's jurisdiction.

The proposed amendment to this rule does not affect any other statutes.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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TRD-200902111  
Cathy L. Hendricks  
Executive Director  
Texas Board of Architectural Examiners  
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Proposal publication date: May 1, 2009  
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## PART 22. TEXAS STATE BOARD OF PUBLIC ACCOUNTANCY

### CHAPTER 501. RULES OF PROFESSIONAL CONDUCT

#### SUBCHAPTER D. RESPONSIBILITIES TO THE PUBLIC

#### 22 TAC §501.82

The Texas State Board of Public Accountancy adopts an amendment to §501.82, concerning Advertising, without changes to the

proposed text as published in the April 10, 2009, issue of the *Texas Register* (34 TexReg 2355) and will not be republished.

The section updates the guidelines for advertising by recognizing electronic communications.

The amendment will function by requiring licensees to retain any electronic advertising transmissions for a period of 36 months.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act ("Act"), Texas Occupations Code, §901.151 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.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on May 28, 2009.

TRD-200902059  
J. Randel (Jerry) Hill  
General Counsel  
Texas State Board of Public Accountancy  
Effective date: June 17, 2009  
Proposal publication date: April 10, 2009  
For further information, please call: (512) 305-7842



#### 22 TAC §501.86

The Texas State Board of Public Accountancy adopts new §501.86, concerning Disclosure of Subsequently Discovered Facts, without changes to the proposed text as published in the April 10, 2009, issue of the *Texas Register* (34 TexReg 2357) and will not be republished.

The section tracks the AICPA standard that requires a CPA to make certain disclosures upon receiving material information after issuing an audit.

The new rule will inform licensees of the need to inform the public when the licensee, after issuing an audit, subsequently becomes aware of information significantly affecting the audit opinion and the client refuses to disclose the information.

No comments were received regarding adoption of the new rule.

The new rule is adopted under the Public Accountancy Act ("Act"), Texas Occupations Code, §901.151 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.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found 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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## SUBCHAPTER E. RESPONSIBILITIES TO THE BOARD/PROFESSION

### 22 TAC §501.90

The Texas State Board of Public Accountancy adopts an amendment to §501.90, concerning Discreditable Acts, without changes to the proposed text as published in the April 10, 2009, issue of the *Texas Register* (34 TexReg 2357) and will not be republished.

The section expands the prohibition of false testimony to include perjury in a court proceeding.

The amendment will function by specifically including perjury occurring in court proceedings as a discreditable act.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act ("Act"), Texas Occupations Code, §901.151 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.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found 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



## CHAPTER 512. CERTIFICATION BY RECIPROCITY

### 22 TAC §512.1

The Texas State Board of Public Accountancy adopts an amendment to §512.1, concerning Certification as a Certified Public Accountant by Reciprocity, without changes to the proposed text as published in the April 10, 2009, issue of the *Texas Register* (34 TexReg 2359) and will not be republished.

The section expands the information required in an application for reciprocity and eliminates the need to maintain a certificate in the state of original jurisdiction.

The amendment will function by requiring an applicant for reciprocity to identify all jurisdictions he has been certified and/or

licensed in and all disciplinary actions taken or currently pending against him.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act ("Act"), Texas Occupations Code, §901.151 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.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found 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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## TITLE 25. HEALTH SERVICES

### PART 1. DEPARTMENT OF STATE HEALTH SERVICES

#### CHAPTER 135. AMBULATORY SURGICAL CENTERS

The Executive Commissioner of the Health and Human Services Commission (commission) on behalf of the Department of State Health Services (department) adopts the repeal of §§135.1 - 135.29, 135.41, 135.42, 135.51 - 135.54 and new §§135.1 - 135.29, 135.41 - 135.43, and 135.51 - 135.56, concerning the regulation of ambulatory surgical centers. The new §§135.2, 135.9, 135.11, 135.13 - 135.15, 135.20, 135.22, 135.41 - 135.43, 135.52, 135.54, and 135.55 are adopted with changes to the proposed text as published in the December 5, 2008, issue of the *Texas Register* (33 TexReg 9860). The repeal of §§135.1 - 135.29, 135.41, 135.42, and 135.51 - 135.54 and new §§135.1, 135.3 - 135.8, 135.10, 135.12, 135.16 - 135.19, 135.21, 135.23 - 135.29, 135.51, 135.53, and 135.56 are adopted without changes and, therefore, the sections will not be republished.

#### BACKGROUND AND PURPOSE

The repeals and new sections are necessary to update, reorganize, and clarify the rules and to implement legislation by the 80th Legislature, Regular Session, 2007, specifically, the amendment to Health and Safety Code, Chapter 324, Consumer Access to Health Care Information (Senate Bill 1731).

Government Code, §2001.039, requires that each state agency review and consider for re-adoption each rule adopted by that agency pursuant to the Government Code, Chapter 2001 (Administrative Procedure Act). Sections 135.1 - 135.29, 135.41, 135.42, and 135.51 - 135.54 have been reviewed, and the department has determined that reasons for adopting the sections continue to exist because rules on this subject are needed.



## SECTION-BY-SECTION SUMMARY

New §§135.1 - 135.29, 135.41 - 135.43, and 135.51 - 135.56 provide clarification to the rules, update references to statutes, rules, codes, guidelines and standards, the names and contact information of associations, boards, commissions, conferences, societies and the department programs. The new §135.1 deletes language that is not statutory. The new §135.2 deletes definitions not used in the rules and revises the definition of advanced practice nurse, certified registered nurse anesthetist (CRNA), licensed vocational nurse, physician, and registered nurse. The new §135.4 requires ambulatory surgical centers (ASCs) to comply with Health and Safety Code, Chapter 324, Consumer Access to Health Care Information. The new §135.9 requires a preanesthesia evaluation by an individual qualified to administer anesthesia. The new §135.11 requires all ASCs to document all approvals or delegations of anesthesia services and include the training, experience, and qualifications of the person who provided the service, and revises the language concerning the physician evaluation of the patient immediately prior to the procedure using the language from the Medicare conditions for coverage for ambulatory surgical services for consistency. New §135.13 clarifies that the discretion of the governing body to require preoperative laboratory orders is upon the recommendation of the medical staff. The new §135.20 updates the license term from annual to two years and specifies background information the applicant must provide regarding the applicant, the applicant's affiliates, and the applicant's managers. The new §135.22 and §135.29 update the license term from annual to two years. The new §135.27 deletes the requirement for ASCs to submit an annual patient safety program report to the department, as the authorizing section of Health and Safety Code, Chapter 243, Subchapter B, Patient Safety Program, expired September 1, 2007. The new §135.42 contains existing language and adds language similar to the hospital licensing rules for clarity and consistency. The new §135.43 adds requirements for the use of alcohol-based hand rubs and gasoline and gasoline powered equipment. The new §135.52 clarifies the prohibition relating to construction in designated 100-year flood plains; clarifies the design for the handicapped; decreases the spatial requirement for the general storage from 50 to 30 square feet per operating room; adds the requirement for a hand washing fixture in the postoperative recovery suite; deletes the requirement for emergency eyewash; increases the spatial requirement for the treatment room from 100 to 120 square feet; increases the spatial requirement for the examination room from 80 to 100 square feet; adds the requirement for a soap dispenser at each hand washing facility; clarifies that a pressure monitoring devices must be mounted below the ceiling line so that it can be observed; changes the requirement for hot water temperature not to exceed 110 degrees to a range of 105 to 120 degrees Fahrenheit; adds the requirement for ground fault circuit interrupters; and adds the requirement for the nurses calling system to have a signal in the sterile processing room and equipment storage. The new §§135.53 - 135.55 are reorganized for clarity and to be consistent with the hospital licensing rules. The new §135.56 updates existing tables.

## COMMENTS

The department, on behalf of the commission, has reviewed and prepared responses to the comments received regarding the proposed rules during the comment period, which the commission has reviewed and accepts. The commenters were individuals, associations, and/or groups, including the following: Texas Ambulatory Surgery Center Society, Texas Association of Nurse

Anesthetists, Texas Council of PeriOperative Registered Nurses (TCORN), Texas Society of Anesthesiologists, Texas Society of Gastroenterology and Endoscopy, Travis County Medical Society, Texas Nurses Association, Coalition for Nurses in Advanced Practice, Harris County Hospital District, and L3 Healthcare Design Inc. The commenters were not against the rules in their entirety; however, the commenters recommended changes as discussed in the summary of comments.

Comment: Concerning §135.2(4), two commenters requested that the term "advanced practice nurse" be changed to "advanced practice registered nurse" throughout the proposed rules to agree with amendments to the Texas Board of Nursing Rules adopted on November 14, 2008.

Response: The commission agrees and has replaced "advanced practice nurse" with "advanced practice registered nurse" in §§135.2, 135.9, 135.11, 135.13, 135.14, and 135.20.

Comment: Concerning §135.2(8), one commenter requested that the words "currently licensed" and "authorized" be deleted to remove redundancy from the definition.

Response: The commission agrees regarding "currently licensed" and has deleted "currently licensed." The commission disagrees with deleting "authorized" because the term "authorized" remains in agreement with the 22 Texas Administrative Code §221.2.

Comment: Concerning §135.9(j)(5), one commenter stated that the rules do not address the issue of who can evaluate and who can't evaluate.

Response: The commission disagrees. Section 135.9(j)(5) requires the ASC to include a preanesthesia evaluation in a patient's medical record. The person who needs to perform the preanesthesia evaluation must be an individual qualified to administer anesthesia. No change has been made to the rule as a result of this comment.

Comment: Concerning §135.9(j)(5), one commenter stated that the proposed rule, which allows a registered nurse (RN) to perform the preanesthesia evaluation for some types of anesthesia, appears to be inconsistent with the proposed rule at §135.11(a)(5). The commenter suggested changing the phrase "an individual qualified to administer anesthesia" to "the operating surgeon, an anesthesiologist, or a certified registered nurse anesthetist (CRNA)."

Response: The commission disagrees. Section 135.9(j)(5) requires the ASC to include a patient's medical record a preanesthesia evaluation performed by an individual qualified to administer anesthesia. This includes an RN who administers anesthesia in compliance with the rules at §135.11(a)(4). The preanesthesia evaluation required by §135.9(j)(5) does not necessarily need to be done immediately before the procedure. Section 135.11(a)(5) requires the operating surgeon to evaluate the patient immediately before the procedure to assess the risk of the anesthesia and of the procedure to be performed. No change has been made to the rule as a result of the comment.

Comment: Concerning §135.9(j)(9), one commenter suggested deleting the phrase "that includes either general, local, or regional anesthetic" after "anesthesia administration record," as anesthesia services described at §135.11(a)(1) are not limited to general, local, and regional anesthesia.

Response: The commission agrees and has deleted the phrase "that includes either general, local, or regional anesthetic."

Comment: Concerning §135.11(a)(3), one commenter requested removal of the words "licensing" and "licensed," in order to avoid any confusion or misinterpretation of the department's intent regarding the important role of anesthesiologist assistants in providing anesthesia care in ambulatory surgical centers.

Response: The commission disagrees. The rules and standards referenced in this rule are the licensing rules and standards applicable to those categories of licensed professionals qualified to administer anesthesia. Section 135.11(a)(4) allows the facility to approve anesthesiologist assistants to administer anesthesia in accordance with the Medical Practice Act, Occupations Code Subtitle B. No change has been made to the rule as a result of this comment.

Comment: Concerning §135.11(a)(4), one commenter stated that the rules do not allow a registered nurse (RN) to give conscious sedation.

Response: The commission disagrees. This rule allows a qualified RN who is not a CRNA, in accordance with the orders of the operating surgeon or an anesthesiologist, to administer topical anesthesia, local anesthesia, minimal sedation and moderate sedation (conscious sedation), in accordance with all applicable rules, polices, directives and guidelines issued by the Texas Board of Nursing. The Texas Board of Nursing position statement 15.8, The Role of the Nurse in Moderate Sedation, states that employing institutions should develop policies and procedures to guide the RN or non-CRNA advanced practice nurse in administration of medications and patient monitoring associated with moderate sedation. Policies and procedures should include but not be limited to performance of a pre-sedation health assessment by the individual ordering the sedation and the nurse administering the sedation. No change has been made to the rule as a result of this comment.

Comment: Concerning §135.11(a)(4), one commenter suggested adding the words "or CRNA" as a CRNA may need to direct an RN to administer a sedative drug during surgery.

Response: The commission agrees and has added the words "or CRNA."

Comment: Concerning §135.11(a)(5), one commenter requested that "physician" be replaced with "operating surgeon."

Response: The commission agrees and has replaced "physician" with "operating surgeon."

Comment: Concerning §135.11(a)(5), one commenter (first commenter) requested that the rule be changed to require the operating surgeon to evaluate the patient immediately prior to the procedure to assess the risk of the procedure to be performed, and the person administering anesthesia to evaluate the patient immediately prior to the procedure to evaluate the risk of anesthesia. Another commenter (second commenter) objected to this change as it would compromise patient safety, and evaluation of a patient for risks associated with anesthesia should be performed by a physician. Then the first commenter withdrew the first comment and requested the rule be changed to require the operating surgeon, an anesthesiologist, or the certified registered nurse anesthetist (CRNA) who will be administering the anesthesia to evaluate the patient immediately prior to surgery to assess the risk of anesthesia relative to the surgical procedure to be performed.

Response: The commission disagrees with the first commenter. This was discussed during the stakeholder meeting. The second commenter had objected to the proposed language as it is true

that medical risks associated with specific procedures should be evaluated. However, it is unwise to limit a preanesthetic assessment to only a planned surgical procedure. It was decided that since most ASCs are Medicare certified, the language in the Medicare ambulatory surgical services conditions for coverage would be used. No change has been made to the rule as a result of these comments.

Comment: Concerning §135.11(a)(5), one commenter requested changing "physician" to "operating surgeon, an anesthesiologist, or the CRNA who will be administering the anesthesia" to allow CRNAs to perform preanesthesia evaluations on their patients.

Response: The commission disagrees. Medicare Conditions of Coverage require physicians to evaluate the patient immediately prior to surgery. No change has been made to the rule as a result of this comment.

Comment: Concerning §135.11(a)(6), one commenter (first commenter) requested that "anesthesiologist" be replaced with "the person administering the anesthesia." Another commenter (second commenter) objected to this change as it ignores the possibility of medical complications beyond recovery from anesthesia of the types administered by registered nurses and which require physician intervention. The second commenter submitted that evaluation of a patient prior to dismissal should be carried out by a physician or, at the very least, an advanced practice nurse, not a registered nurse. Then the second commenter withdrew the first comment and requested that CRNA be added to the list of available personnel.

Response: The commission agrees with the second commenter and has added "advanced practice nurse."

Comment: Concerning §135.11(a)(6), one commenter suggested adding the words "or CRNA" to allow CRNAs to be available instead of the operating surgeon when the surgery has been performed by a surgeon working with a CRNA.

Response: The commission agrees but has used the broader term of "advanced practice registered nurse" because it includes "CRNA."

Comment: Concerning §135.15(a)(2)(C), three commenters requested clarification that surgical technologists and licensed vocational nurses may be permitted to serve in the scrub nurse role, and requested the deletion of the exception allowing surgical technologists and licensed vocational nurses to function as circulating nurses in the operating room in ASCs where no general anesthesia is administered and when there is an adequate number of RNs immediately available for an emergency situation. These revisions would support the Association of Peri-Operative Registered Nurses's and TCORN's position regarding the need for every patient having a surgical or other invasive procedure to have an RN as the circulator regardless of the type of anesthetic provided.

Response: The commission agrees and has made the recommended changes.

Comment: Concerning §135.52(a)(3)(B), two commenters stated that the 100-year flood plain restriction will create an obstacle to access to surgery care in some areas of Texas and requested adding the phrase "the floor of the ASC is above the flood plain in new construction."

Response: The commission agrees and has made the recommended change.

Comment: Concerning §135.52(d)(9)(B)(i), (E)(ii), and (10)(B)(ii), one commenter stated that the requirement of four feet at the foot of the bed does not address patient safety or quality but it merely increases costs, which must be passed on to the patient.

Response: The commission disagrees. This requirement is not a change. This requirement is in the current rules. No change has been made to the rule as a result of this comment.

Comment: Concerning §135.52(d)(9)(D) and (10)(B)(iv), one commenter asked if the requirement of one sink for every four beds includes the sinks that are in the bathrooms and suggested that the bathroom sinks located in these areas be counted.

Response: The commission disagrees. The rules follow closely the sink requirements of the American Institute of Architects Academy of Architecture for Health, Guidelines for Design and Construction of Health Care Facilities, 2006 edition (AIA Guidelines). The focus was to assure minimal requirements and to follow national standards and trends for health care facilities. The new language concurs with the AIA Guidelines, which require hand-washing stations with at least one station for every four stretchers or portion thereof, and uniform distribution to provide equal access from each patient position within the post-anesthesia recovery room(s) care area. No change has been made to the language as a result of this comment.

Comment: Concerning §135.52(d)(16)(C), one commenter stated that increasing the square feet requirement to 120 from 100 is an additional expense that has to go into construction. The requirement of 100 square feet has worked very well, and in endoscopy suites you don't need more than 100 square feet.

Response: The commission disagrees. The proposed rules follow closely the 120 square feet for treatment room requirements of the American Institute of Architects Academy of Architecture for Health, Guidelines for Design and Construction of Health Care Facilities, 2006 edition (AIA Guidelines). The focus was to assure minimal requirements and to follow national standards and trends for health care facilities. The new language concurs with the AIA Guidelines, which require that rooms for minor surgical and cast procedures, if provided, shall have a minimum floor area of 120 square feet. This square footage shall exclude vestibule, toilet, closets, and fixed casework. The minimum room dimension shall be 10 feet. No change has been made to the language as a result of this comment.

Comment: Concerning §135.52(e)(1)(B)(iii)(I), one commenter stated that the minimum clear and unobstructed width of a public corridor of four feet in the current rules is misleading due to American Disability Act (ADA) and NFPA 101 requirements.

Response: The commission agrees that the codes are different, but disagrees that this should not be a licensing requirement. NFPA 101, 2003: §20.2.3.2 requires at a minimum the clear width of any corridor or passageway required for exit access to be not less than 44 inches. The minimum width clear for an accessible route by ADA is 36 inches. There are additional requirements for ADA accessible routes for passing spaces and wheelchair turn around. At least one ADA accessible route shall meet the requirements and elements in building or facility. These differences have been in the codes for years. The department adopted 48 inches in clear unobstructed width to assure a reasonable means of transporting a patient on a gurney to an exit and the ability of staff, patients, and visitors to pass each other without someone having to step aside. The requirement of 48-inch width of a public corridor has been a requirement since

1986. No change has been made to the rule as a result of this comment.

Comment: Concerning §135.52(e)(1)(B)(iii)(III), one commenter stated that the requirement that the eight-foot communicating corridor open directly to one exit could be misleading in the use of the term "Exit" especially in a multi-story building.

Response: The commission disagrees. "Exit" is defined in the National Fire Protection Association (NFPA) 101, Life Safety Code, 2003 Edition (NFPA 101), §3.3.62 Exit, §3.3.63 Exit Access and §3.3.64 Exit Discharge. There are three components to the means of egress, the "Exit" which is a portion of the means that is protected from all other spaces of a building or structure, the "Exit Access" is the portion of a means of egress that leads to an "Exit," and the "Exit Discharge" is the termination portion of a means of egress between the termination of an exit and public way. The communicating corridor leading to an "Exit" can either be to a door to the exterior of the building or in the case of multi-story building to a stair. No change has been made to the rule as a result of this comment.

Comment: Concerning §135.53(b)(1), one commenter stated that an elevator can open to an exit and allow people to exit the building.

Response: The commission disagrees. An "Exit" is not the same as an "Exit Access" corridor. NFPA 101, 2003: §3.3.62, defines the "Exit" as that portion of a means of egress that is separated from all other spaces of a building or structure by construction or equipment as required to provide a protected way of travel to the exit discharge. An elevator can open into an "Exit Access" corridor but not into an "Exit." No change has been made to the rule as a result of this comment.

The department staff on behalf of the commission provided comments, and the commission has reviewed and agrees to the following changes.

Change: Concerning §135.9(j)(6), the words "podiatrist, dentist," were added for accuracy.

Change: Concerning §135.9(j)(12) and (b)(18), the term "physician" was revised to "operating surgeon" for accuracy.

Change: Concerning §§135.22, 135.41 - 135.43, and 135.54, grammatical revisions and minor rule text revisions were added for clarification.

Change: Concerning §135.52(f)(3)(A)(iii), the words "soiled workrooms" were added as this was inadvertently left out in the proposed rule.

Change: Concerning §135.52(d)(3), the department reduced the square footage requirement for the exam room from 100 square feet to 80 square feet. The 80 square feet for the exam room was determined to be sufficient.

Change: Concerning §135.52(e)(1)(B)(vi), the department deleted the word "treatment" after the word "examination" as this was inadvertently added in this sentence.

Change: Concerning §135.52(h)(5)(G), the language was deleted as it is a duplicate of §135.52(h)(5)(F). Subsequent subparagraphs were re-lettered.

Change: Concerning §135.52(i)(15)(J), the words "shall be provided" were added to complete the sentence.

Change: Concerning §135.55(c)(1)(E), the rule reference "135.52(h)(6)(C)(iv)" was corrected to "135.52(h)(1)(C)(iv)."

## LEGAL CERTIFICATION

The Department of State Health Services General Counsel, Lisa Hernandez, certifies that the rules, as adopted, have been reviewed by legal counsel and found to be a valid exercise of the agencies' legal authority.

## SUBCHAPTER A. OPERATING REQUIREMENTS FOR AMBULATORY SURGICAL CENTERS

### 25 TAC §§135.1 - 135.29

#### STATUTORY AUTHORITY

The repeals are adopted under the Health and Safety Code, §243.009, concerning rules and minimum standards to protect and promote the public health and welfare by providing for the issuance, renewal, denial, suspension, and revocation of each license; and Government Code, §531.0055, and Health and Safety Code, §1001.075, which authorize the Executive Commissioner of the Health and Human Services Commission to adopt rules and policies necessary for the operation and provision of health and human services by the department and for the administration of Health and Safety Code, Chapter 1001. Review of the rules implements Government Code, §2001.039.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902086

Lisa Hernandez

General Counsel

Department of State Health Services

Effective date: June 18, 2009

Proposal publication date: December 5, 2008

For further information, please call: (512) 458-7111 x6972



### 25 TAC §§135.1 - 135.29

#### STATUTORY AUTHORITY

The new sections are adopted under the Health and Safety Code, §243.009, concerning rules and minimum standards to protect and promote the public health and welfare by providing for the issuance, renewal, denial, suspension, and revocation of each license; and Government Code, §531.0055, and Health and Safety Code, §1001.075, which authorize the Executive Commissioner of the Health and Human Services Commission to adopt rules and policies necessary for the operation and provision of health and human services by the department and for the administration of Health and Safety Code, Chapter 1001. Review of the rules implements Government Code, §2001.039.

#### §135.2. Definitions.

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

(1) Act--Texas Ambulatory Surgical Center Licensing Act, Health and Safety Code, Chapter 243.

(2) Action plan--A written document that includes specific measures to correct identified problems or areas of concern; identifies strategies for implementing system improvements; and includes out-

come measures to indicate the effectiveness of system improvements in reducing, controlling or eliminating identified problem areas.

(3) Administrator--A person who is a physician, is a registered nurse, has a baccalaureate or postgraduate degree in administration or a health-related field, or has one year of administrative experience in a health care setting.

(4) Advanced practice registered nurse (APRN)--A registered nurse approved by the Texas Board of Nursing to practice as an advanced practice registered nurse in Texas. The term includes a nurse practitioner, nurse midwife, nurse anesthetist, and clinical nurse specialist. The term is synonymous with "advanced nurse practitioner."

(5) Ambulatory Surgical Center (ASC)--A facility that primarily provides surgical services to patients who do not require overnight hospitalization or extensive recovery, convalescent time or observation. The planned total length of stay for an ASC patient shall not exceed 23 hours. Patient stays of greater than 23 hours shall be the result of an unanticipated medical condition and shall occur infrequently. The 23-hour period begins with the induction of anesthesia.

(6) Autologous blood units--Units of blood or blood products derived from the recipient.

(7) Available--Able to be physically present in the facility to assume responsibility for the delivery of patient care services within five minutes.

(8) Certified registered nurse anesthetist (CRNA)--A registered nurse who has current certification from the Council on Certification of Nurse Anesthetists and who is currently authorized to practice as an advanced practice registered nurse by the Texas Board of Nursing.

(9) Change of ownership--

(A) a sole proprietor who transfers all or part of the ASC's ownership to another person or persons;

(B) the removal, addition, or substitution of a person or persons as a general, managing, or controlling partner in an ASC owned by a partnership and the tax identification number of that ownership changes; or

(C) a corporation that transfers all or part of the corporate stock which represents the ASC's ownership to another person or persons and the tax identification number of that ownership changes.

(10) Dentist--A person who is currently licensed under the laws of this state to practice dentistry.

(11) Department--The Department of State Health Services.

(12) Disposal--The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste (whether containerized or uncontainerized) into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharge into any waters, including ground waters.

(13) Extended observation--The period of time that a patient remains in the facility following recovery from anesthesia and discharge from the postanesthesia care unit, during which additional comfort measures or observation may be provided.

(14) Health care practitioners (qualified medical personnel)--Individuals currently licensed under the laws of this state who are authorized to provide services in an ASC.

(15) Licensed vocational nurse (LVN)--A person who is currently licensed by the Texas Board of Nursing as a licensed vocational nurse.

(16) Medicare-approved reference laboratory--A facility that has been certified and found eligible for Medicare reimbursement, and includes hospital laboratories which may be Joint Commission or American Osteopathic Association accredited or nonaccredited Medicare approved hospitals, and Medicare certified independent laboratories.

(17) Person--Any individual, firm, partnership, corporation, or association.

(18) Physician--An individual licensed by the Texas Medical Board and authorized to practice medicine in the State of Texas.

(19) Premises--A building where patients receive outpatient surgical services.

(20) Registered nurse (RN)--A person who is currently licensed by the Texas Board of Nursing as a registered nurse.

(21) Title XVIII--Title XVIII of the United States Social Security Act, 42 United States Code (USC), §§1395 et seq.

*§135.9. Medical Records.*

(a) The ambulatory surgical center (ASC) shall develop and maintain a system for the collection, processing, maintenance, storage, retrieval, and distribution of patient's medical records.

(b) An individual medical record shall be established for each person receiving care.

(c) All clinical information relevant to a patient shall be readily available to health care practitioners involved in the care of that patient.

(d) Except when otherwise required by law, any record that contains clinical, social, financial, or other data on a patient shall be strictly confidential and shall be protected from loss, tampering, alteration, destruction, and unauthorized or inadvertent disclosure.

(e) A person shall be designated to be in charge of medical records whose responsibilities include, but are not limited to:

(1) the confidentiality, security, and safe storage of medical records;

(2) the timely retrieval of individual medical records upon request;

(3) the specific identification of each patient's medical record;

(4) the supervision of the collection, processing, maintenance, storage, retrieval, and distribution of medical records; and

(5) the maintenance of a predetermined organized medical record format.

(f) Policies concerning medical records shall follow current statute in regard to retention of active records, retirement of inactive records, and the release of information contained in the record.

(g) Except when otherwise required by law, the content and format of medical records, including the sequence of information, shall be uniform.

(h) Reports, histories and physicals, progress notes, and other patient information (such as laboratory reports, X-ray readings, and consultation) shall be incorporated into the medical record in a timely manner.

(i) Medical records shall be available to authorized health care practitioners any time the ASC is open to patients.

(j) The ASC shall include the following in patients' medical records:

(1) patient identification;

(2) allergies and untoward reactions to drugs recorded in a prominent and uniform location;

(3) all preoperative, postoperative medications administered and drug/dose/route/frequency/quantity of all postoperative drugs dispensed to the patient by the ASC and entered on the patient's record;

(4) significant medical history and results of physical examination;

(5) a preanesthesia evaluation by an individual qualified to administer anesthesia;

(6) preoperative diagnostic studies entered before surgery, if required by policy or ordered by a physician, podiatrist, dentist, or advanced practice registered nurse;

(7) findings and techniques of the operation (operative report);

(8) pathology report on all tissues removed during surgery, except those exempted by the governing body;

(9) anesthesia administration record;

(10) documentation of a properly executed informed consent;

(11) evidence of evaluation of the patient by a physician or advanced practice registered nurse prior to dismissal;

(12) evidence that the patient left the facility in the company of a responsible adult, unless the operating surgeon or advanced practice registered nurse writes an order that the patient may leave the facility without the company of a responsible adult; and

(13) for patients with a length of stay greater than eight hours, an evaluation of nutritional needs and evidence of how identified needs were met.

(k) Appropriate medical advice given to a patient by telephone shall be entered in the patient's medical record and appropriately signed or initialed.

(l) Entries in patients' medical records shall be legible to clinical personnel, and shall be accurate and completed promptly.

(m) Any notation in a patient's medical record indicating diagnostic or therapeutic intervention as part of clinical research shall be clearly contrasted with entries regarding the provision of nonresearch-related care.

(n) When necessary for assuring continuity of care, summaries of records of a patient who was treated elsewhere (such as by another physician, hospital, ambulatory surgical center, nursing home, or consultant) shall be obtained.

(o) When necessary for assuring continuity of care, summaries or photocopies of the patient's record shall be transferred to the health care practitioner to whom the patient was referred and, if appropriate, to the facility where future care will be rendered.

(p) Certain repetitive procedures are suitable for pre-printed operative notes. These operative notes are suitable as long as they are

approved by the governing body, are signed by the surgeon, and transmit to a knowledgeable reader the events of the surgical procedure.

(q) All final tissue and abnormal cytology reports from the Medicare-approved reference laboratory shall be signed by a pathologist.

§135.11. *Anesthesia and Surgical Services.*

(a) Anesthesia services.

(1) Anesthesia services provided in the ambulatory surgical center (ASC) shall be limited to those that are approved by the governing body, which may include the following.

(A) Topical anesthesia--An anesthetic agent applied directly or by spray to the skin or mucous membranes, intended to produce transient and reversible loss of sensation to the circumscribed area.

(B) Local anesthesia--Administration of an agent that produces a transient and reversible loss of sensation to a circumscribed portion of the body.

(C) Regional anesthesia--Anesthetic injected around a single nerve, a network of nerves, or vein that serves the area involved in a surgical procedure to block pain.

(D) Minimal sedation (anxiolysis)--A drug-induced state during which patients respond normally to verbal commands. Although cognitive function and coordination may be impaired, ventilatory and cardiovascular functions are unaffected.

(E) Moderate sedation/analgesia ("conscious sedation")--A drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained. (Reflex withdrawal from a painful stimulus is NOT considered a purposeful response.)

(F) Deep sedation/analgesia--A drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained. (Reflex withdrawal from a painful stimulus is NOT considered a purposeful response.)

(G) General anesthesia--A drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.

(2) The anesthesia department shall be under the medical direction of a physician approved by the governing body upon the recommendation of the ASC medical staff.

(3) The medical staff shall develop written policies and practice guidelines for the anesthesia service, which shall be approved, implemented and enforced by the governing body. The policies and guidelines shall include consideration of the applicable practice standards and guidelines of the American Society of Anesthesiologists, the American Association of Nurse Anesthetists, and the licensing rules and standards applicable to those categories of licensed professionals qualified to administer anesthesia.

(4) Only personnel who have been approved by the facility to provide anesthesia services shall administer anesthesia. All approvals or delegations of anesthesia services as authorized by law shall be documented and include the training, experience, and qualifications of the person who provided the service. A qualified registered nurse (RN) who is not a certified registered nurse anesthetist (CRNA), in accordance with the orders of the operating surgeon, anesthesiologist, or CRNA, may administer topical anesthesia, local anesthesia, minimal sedation and moderate sedation, in accordance with all applicable rules, policies, directives and guidelines issued by the Texas Board of Nursing. When an RN who is not a CRNA administers sedation, as permitted in this paragraph, the facility shall:

(A) verify that the registered nurse has the requisite training, education, and experience;

(B) maintain documentation to support that the registered nurse has demonstrated competency in the administration of sedation;

(C) with input from the facility's qualified anesthesia providers, develop, implement and enforce detailed, written policies and procedures to guide the registered nurse; and

(D) ensure that, when administering sedation during a procedure, the registered nurse has no other duties except to monitor the patient.

(5) Anesthesia shall not be administered unless the operating surgeon has evaluated the patient immediately prior to the procedure to assess the risk of the anesthesia and of the procedure to be performed.

(6) The advanced practice registered nurse, the anesthesiologist, or the operating surgeon shall be available until all of his or her patients operated on that day have been discharged from the postanesthesia care unit.

(7) Patients who have received anesthesia shall be evaluated for proper anesthesia recovery by the operating surgeon or the person administering the anesthesia prior to discharge from the postanesthesia care unit using criteria approved by the medical staff.

(8) Patients who remain in the facility for extended observation following discharge from the postanesthesia care unit shall be evaluated immediately prior to leaving the facility by a physician, the person administering the anesthesia, or a registered nurse acting in accordance with physician's orders and written policies, procedures, and criteria developed by the medical staff.

(9) A physician shall be on call and able to respond physically or by telephone within 30 minutes until all patients have been discharged from the ASC.

(10) Emergency equipment and supplies appropriate for the type of anesthesia services provided shall be maintained and accessible to staff at all times.

(A) Functioning equipment and supplies which are required for all facilities include:

(i) suctioning equipment, including a source of suction and suction catheters in appropriate sizes for the population being served;

(ii) source of compressed oxygen;

(iii) basic airway management equipment, including oral and nasal airways, face masks, and self-inflating breathing bag valve set;

(iv) blood pressure monitoring equipment; and

(v) emergency medications specified by the medical staff and appropriate to the type of surgical procedures and anesthesia services provided by the facility.

(B) In addition to the equipment and supplies required under subparagraph (A) of this paragraph, facilities which provide moderate sedation/analgesia, deep sedation/analgesia, regional analgesia and/or general anesthesia shall provide the following:

(i) intravenous equipment, including catheters, tubing, fluids, dressing supplies, and appropriately sized needles and syringes;

(ii) advanced airway management equipment, including laryngoscopes and an assortment of blades, endotracheal tubes and stylets in appropriate sizes for the population being served;

(iii) a mechanism for monitoring blood oxygenation, such as pulse oximetry;

(iv) electrocardiographic monitoring equipment;

(v) cardiovertor-defibrillator; and

(vi) pharmacologic antagonists as specified by the medical staff and appropriate to the type of anesthesia services provided.

(b) Surgical services.

(1) Surgical procedures performed in the ASC shall be limited to those procedures that are approved by the governing body upon the recommendation of qualified medical personnel.

(2) Adequate supervision of surgery conducted in the ASC shall be a responsibility of the governing body, shall be recommended by qualified medical personnel, and shall be provided by appropriate personnel.

(3) Surgical procedures shall be performed only by health care practitioners who are licensed to perform such procedures within Texas and who have been granted privileges to perform those procedures by the governing body of the ASC, upon the recommendation of qualified medical personnel and after medical review of the practitioner's documented education, training, experience, and current competence.

(4) Surgical procedures to be performed in the ASC shall be reviewed periodically as part of the peer review portion of the ASC's quality assurance program.

(5) An appropriate history, physical examination, and pertinent preoperative diagnostic studies shall be incorporated into the patient's medical record prior to surgery.

(6) The necessity or appropriateness of the proposed surgery, as well as any available alternative treatment techniques, shall be discussed with the patient prior to scheduling the patient for surgery.

(7) Licensed nurses and other personnel assisting in the provision of surgical services shall be appropriately trained and supervised and shall be available in sufficient numbers for the surgical care provided.

(8) Each operating room shall be designed and equipped so that the types of surgery conducted can be performed in a manner that protects the lives and assures the physical safety of all persons in the area.

(A) If flammable agents are present in an operating room the room shall be constructed and equipped in compliance with standards established by the National Fire Protection Association

(NFPA 99, Annex 2, Flammable Anesthetizing Locations, 1999) and with applicable state and local fire codes.

(B) If nonflammable agents are present in an operating room the room shall be constructed and equipped in compliance with standards established by the National Fire Protection Association (NFPA 99, Chapters 4 and 8, 1999) and with applicable state and local fire codes.

(9) With the exception of those tissues exempted by the governing body after medical review, tissues removed during surgery shall be examined by a pathologist, whose signed report of the examination shall be made a part of the patient's medical record.

(10) A description of the findings and techniques of an operation shall be accurately and completely written or dictated immediately after the procedure by the health care practitioner who performed the operation. If the description is dictated, an accurate written summary shall be immediately available to the health care practitioners providing patient care and shall become part of the patient's medical record. Refer to §135.9(p) of this title (relating to Medical Records).

(11) A safe environment for treating surgical patients, including adequate safeguards to protect the patient from cross infection, shall be assured through the provision of adequate space, equipment, and personnel.

(A) Provisions shall be made for the isolation or immediate transfer of patients with communicable diseases.

(B) All persons entering operating rooms shall be properly attired.

(C) Acceptable aseptic techniques shall be used by all persons in the surgical area.

(D) Only authorized persons shall be allowed in the surgical area.

(E) Suitable equipment for rapid and routine sterilization shall be available to assure that operating room materials are sterile.

(F) Environmental controls shall be implemented to assure a safe and sanitary environment.

(G) Operating rooms shall be appropriately cleaned before each operation.

(12) Written policies and procedures for decontamination, disinfection, sterilization, and storage of sterile supplies shall be developed, implemented and enforced. Policies shall include, but not be limited to, the receiving, cleaning, decontaminating, disinfecting, preparing, and sterilization of critical items (reusable items), as well as for the assembly, wrapping, storage, distribution, and the monitoring and control of sterile items and equipment.

(A) Policies and procedures shall be developed following standards, guidelines, and recommendations issued by the Association of periOperative Registered Nurses (AORN), the Association for Professionals in Infection Control and Epidemiology (APIC), the Centers for Disease Control and Prevention (CDC) and, if applicable, the Society of Gastroenterology Nurses and Associates (SGNA). Standards, guidelines, and recommendations of these organizations are available for review at the Department of State Health Services, Exchange Building, 8407 Wall Street, Austin, Texas. Copies may also be obtained directly from each organization, as follows: AORN, 2170 South Parker Road, Suite 300, Denver Colorado, 80231, (800) 755-2676; APIC, 1275 K Street, Northwest, Suite 1000, Washington, District of Columbia, 20005-4006, (202) 789-1890; CDC, 1600 Clifton

Road, Atlanta, Georgia, 30333, (800) 311-3435; SGNA, 401 North Michigan Avenue, Chicago, Illinois, 60611-4267, (312) 321-5165.

(B) Policies and procedures shall also address proper use of external chemical indicators and biological indicators.

(C) Performance records for all sterilizers shall be maintained for a period of six months.

(D) Preventive maintenance of all sterilizers shall be completed according to manufacturer's recommendations on a scheduled basis. A preventive maintenance record shall be maintained for each sterilizer. These records shall be retained at least one year and shall be available for review to the facility within two hours of request by the department.

(13) Emergency power adequate for the type of surgery performed shall be available in the operative and postoperative recovery areas.

(14) Periodic calibration and/or preventive maintenance of all equipment shall be provided in accordance with manufacturer's guidelines.

(15) The informed consent of the patient or, if applicable, of the patient's legal representative shall be obtained before an operation is performed.

(16) A written procedure shall be established for observation and care of the patient during the preoperative preparation and postoperative recovery period.

(17) Written protocols shall be established for instructing patients in self-care after surgery, including written instructions to be given to patients who receive conscious sedation, regional, and general anesthesia.

(18) Patients who have received anesthesia shall only be allowed to leave the facility in the company of a responsible adult, unless the operating surgeon or an advanced practice registered nurse writes an order that the patient may leave without the company of a responsible adult.

(19) An effective written procedure for the immediate transfer to a hospital of patients requiring emergency care beyond the capabilities of the ASC shall be developed. The ASC shall have a written transfer agreement with a hospital, or all physicians on staff at the ASC shall have admitting privileges at a local hospital.

#### *§135.13. Pathology and Medical Laboratory Services.*

Pathological and clinical services shall be provided or made available when appropriate to meet the needs of the patients and adequately support the ambulatory surgical center's (ASC's) clinical capabilities.

(1) Pathology and clinical laboratory services shall include, but are not limited to:

(A) conducting laboratory procedures that are appropriate to the needs of the patients;

(B) performing tests in a timely manner;

(C) distributing test results within 24 hours after completion of a test and maintaining a copy of the results in the laboratory; and

(D) performing and documenting appropriate quality assurance procedures, including, but not limited to, calibrating equipment periodically and validating test results through use of standardized control specimens or laboratories.

(2) Preoperative laboratory procedures may be required as follows.

(A) It shall be at the discretion of the governing body upon the recommendation of the medical staff to require preoperative laboratory orders.

(B) If specific preoperative laboratory work is required, the medical staff shall approve them in accordance with the medical staff bylaws. Other laboratory work shall be performed only on the order of a physician, podiatrist, dentist, or advanced practice registered nurse and written on the patient's chart.

(C) These services shall be provided either directly within or through an effective contract arrangement with a Medicare-approved reference laboratory.

(D) The contractual agreement with the Medicare-approved reference laboratory shall provide for routine and stat work to include pathology, clinical, and blood bank services, if blood is authorized by the ASC, and shall be available for review.

(3) The patient may be instructed to go directly to the Medicare-approved reference laboratory, or the specimen may be collected on the ambulatory surgical center's premises and then referred to the Medicare-approved reference laboratory.

(4) If the specimens are collected on the premises only, the following shall be maintained:

(A) procedures and policies governing the Medicare-approved reference laboratory specimen requirements; identification, collection, labeling, storage, and transportation of the specimen, and preventive maintenance of equipment used in processing and storage of specimen;

(B) a log book which shall include patient name and identification number, doctor's name, date the specimen was drawn and sent to the Medicare-approved reference laboratory, laboratory tests ordered, date the final report came back from the reference laboratory, and condition of the specimen. The final report shall be on the patient's chart, with copies kept in the ASC's laboratory.

(5) If laboratory tests are performed on the premises, the following shall be maintained:

(A) procedures governing identification, collection, labeling, and storage of specimens;

(B) a log book, which shall include patient name and identification number, practitioner's name, date the specimen was drawn, test ordered, and results;

(C) procedures for each test procedure performed by the laboratory, including source of reagents, standards, and calibration procedures, and information concerning the basis for the tested normal ranges;

(D) procedures and documentation of performed maintenance on equipment used to process laboratory work;

(E) dated reports of all examinations performed and made a part of the patient's medical record; and

(F) proficiency testing.

(6) Quality control of the laboratory shall be monitored through the quality assurance committee.

(7) If the ASC designates its laboratory to perform as an independent laboratory, it shall be surveyed according to 42 Code of Federal Regulations, §§493.1 - 493.1780.

(8) The ASC can allow laboratory work to be performed and brought in from other Medicare-approved reference laboratories



or practitioners' offices, and the reports shall be on the patient's charts before surgery.

(A) Written criteria describing the length of time tests can be done prior to surgery shall be developed by the medical staff and approved by the governing body.

(B) Laboratory work shall be performed in a Medicare-approved reference laboratory or in the patient's healthcare practitioner's office. This shall be written in a policy accepted by the medical staff and governing body.

(9) If it is the ASC's policy to administer blood, policies shall be developed on administration of blood transfusions to include autologous blood units in accordance with the ASC's operative procedures. If the operative procedure(s) performed in the ASC requires or may require the necessity for transfusions, policies and procedures shall include provisions for stat and routine transfusions. These policies and procedures shall include, but are not limited to, collection, labeling, and transportation of specimen in accordance with the ASC or contract service policies. All patient results shall appear in the patient's chart.

(10) If the ASC performs surgery which incorporates the removal of a tissue specimen or the freezing of a tissue specimen, the specimen shall be submitted to a Medicare-approved reference laboratory. The following shall be maintained:

(A) procedures governing the Medicare-approved reference laboratory specimen requirements, identification, collection, labeling, storage, and transportation of the specimen;

(B) documentation to include patient name and identification number, practitioner's name, date the tissue specimen was collected and referred to the Medicare-approved reference laboratory, and date the final report came back from the Medicare-approved reference laboratory. Final copies shall be placed in the patient's chart, with copies kept in the ASC; and

(C) the medical staff bylaws may exempt tissue specimens from pathology examination, and the list of exemptions shall be available for review.

(11) The medical staff bylaws shall define those specimens for macroscopic pathology examination only and both macroscopic and microscopic pathology examinations.

(12) The original pathology report shall be included in the patient's chart.

(13) Pathology tissue reports and positive cytology reports shall have the authorized signature of the pathologist interpreting the report.

#### *§135.14. Radiology Services.*

(a) Radiology services shall be provided or made available when appropriate to meet the needs of the patients and adequately support the ambulatory surgical center's (ASC's) clinical capabilities. Policy and procedures shall be available for emergency and/or routine radiological procedures.

(b) A radiologist shall authenticate all examination reports, except reports of specific procedures that may be authenticated by physicians who are not radiologists, but who have been granted privileges by the governing body or its designee to authenticate such reports.

(c) Services shall be provided either directly within or through a Medicare-approved facility, and the contracts shall be available for review.

(d) If X-ray services are performed within the ASC, the X-ray department shall be surveyed according to 42 Code of Federal Regulations §482.26 or §§486.100 - 486.110.

(e) Procedure manuals shall include procedures for all examinations performed, infection control in the ASC and operating rooms to include dress code of personnel and cleaning of equipment.

(f) Policies shall address the quality aspects of radiology services, including, but not limited to:

(1) performing radiology services only upon the written order of a physician, dentist, advanced practice registered nurse, or other authorized health care practitioner (such orders shall be accompanied by a concise statement of the reason for the examination); and

(2) limiting the use of any radioactive sources in the ASC to physicians who have been granted privileges for such use on the basis of their training, experience, and current competence.

(g) Policies shall address the safety aspects of radiology services, including, but not limited to:

(1) regulation of the use, removal, handling, and storage of any radioactive material which is required to be licensed by the Department of State Health Services, Radiation Safety Licensing Branch;

(2) precautions against electrical, mechanical, and radiation hazards;

(3) proper shielding where radiation sources are used;

(4) acceptable monitoring devices for all personnel who might be exposed to radiation (monitoring devices shall be worn by such personnel in any area with a radiation hazard);

(5) maintenance of radiation exposure records on personnel; and

(6) authenticated, dated reports of all examinations performed shall be made a part of the patient's medical record.

(h) Laser equipment shall be licensed as required by the Department of State Health Services, Radiation Safety Licensing Branch. Policies and procedures shall be established and implemented for laser technology which include laser safety programs, education and training of laser personnel, credentialing for each specific laser, and a requirement for all personnel working with lasers to be adequately trained in the safety and use of each type of laser utilized.

#### *§135.15. Facility Staffing and Training.*

(a) Nursing services.

(1) There shall be an organized nursing service under the direction of a qualified registered nurse (RN). The ambulatory surgical center (ASC) shall be staffed to assure that the nursing needs of all patients are met.

(2) There shall be a written plan of administrative authority for all nursing services with responsibilities and duties of each category of nursing personnel delineated and a written job description for each category. The scope of nursing service shall include, but is not limited to, nursing care rendered to patients preoperatively, intraoperatively, and postoperatively.

(A) The responsible individual for nursing services shall be a qualified registered nurse (RN) whose responsibility and authority for nursing service shall be clearly defined and includes supervision of both personnel performance and patient care.

(B) There shall be a written delineation of functions, qualifications, and patient care responsibilities for all categories of nursing personnel.

(C) Surgical technicians and licensed vocational nurses may be permitted to serve in the scrub nurse role under the direct supervision of an RN; they shall not be permitted to function as circulating nurses in the operating rooms. Licensed vocational nurses and surgical technicians may assist in circulatory duties under the direct supervision of a qualified RN.

(D) Nursing services shall be provided in accordance with current recognized standards or recommended practices.

(3) There shall be an adequate number of RNs on duty to meet the following minimum staff requirements: director of the department (or designee), and supervisory and staff personnel for each service area to assure the immediate availability of an RN for emergency care or for any patient when needed.

(A) An RN shall assign the nursing care of each patient to other nursing personnel in accordance with the patient's needs and the preparation and qualifications of the nursing staff available.

(B) There shall be other nursing personnel in sufficient numbers to provide nursing care not requiring the service of an RN.

(4) An RN qualified, at a minimum, with current certification in basic cardiac life support shall be on duty and on the premises at all times whenever patients are present in the facility.

(b) Additional staffing requirements. In addition to meeting the requirements for nursing staff under subsection (a) of this section, facilities shall comply with the following minimum staffing requirements.

(1) Facilities that provide only topical anesthesia, local anesthesia and/or minimal sedation are required to have a second individual on duty on the premises who is trained and currently certified in basic cardiac life support until all patients have been discharged from the facility.

(2) Facilities that provide moderate sedation/analgesia are required to have the following additional staff:

(A) a second individual on duty on the premises who is trained and currently certified in basic cardiac life support until all patients have been discharged from the facility; and

(B) an individual trained and currently certified in advanced cardiac life support and, if surgery is performed on pediatric patients, pediatric advanced life support shall be available until all patients have been discharged from the postanesthesia care unit.

(3) Facilities that provide deep sedation/analgesia, general anesthesia, and/or regional anesthesia shall have the following additional staff:

(A) a second individual on duty on the premises who is trained and currently certified in basic cardiac life support until all patients have been discharged from the facility; and

(B) an individual who is trained and currently certified in advanced cardiac life support and, if surgery is performed on pediatric patients, pediatric advanced life support shall be on duty on the premises and sufficiently free of other duties to enable the individual to respond rapidly to emergency situations until all patients have been discharged from the postanesthesia care unit.

*§135.20. Initial Application and Issuance of License.*

(a) All first-time applications for licensing, including those from unlicensed operating ambulatory surgical centers (ASCs) and licensed ASCs for which a change of ownership or relocation is anticipated, are applications for an initial license.

(b) Upon written or verbal request, the department shall furnish a person with an application form for an ASC license. The applicant shall submit to the department a completed original application and the nonrefundable license fee.

(1) The applicant shall provide:

(A) the name and address of the owner of the ASC, or a list of names and addresses of persons who own an interest in the ASC;

(B) the name, Texas license number, and license expiration date of the medical chief of staff;

(C) the number of physicians, dentists, podiatrists and advanced practice registered nurses on staff at the ASC;

(D) the name, Texas license number, and license expiration date of the director of nursing of the ASC;

(E) whether the ASC has applied for certification under Title XVIII of the Social Security Act; and

(F) number of surgery suites.

(G) the following data concerning the applicant, the applicant's affiliates, and the managers of the applicant:

(i) denial, suspension, probation, or revocation of an ambulatory surgical center license in any state, a license for any health care facility or a license for a home and community support services agency (agency) in any state; or any other enforcement action, such as (but not limited to) court civil or criminal action in any state;

(ii) denial, suspension, probation, or revocation of or other enforcement action against an ambulatory surgical center license in any state, a license for any health care facility in any state, or a license for an agency in any state which is or was proposed by the licensing agency and the status of the proposal;

(iii) surrendering a license before expiration of the license or allowing a license to expire in lieu of the department proceeding with enforcement action;

(iv) federal or state (any state) criminal felony arrests or convictions;

(v) Medicare or Medicaid sanctions or penalties relating to the operation of a health care facility or agency;

(vi) operation of a health care facility or agency that has been decertified or terminated from participation in any state under Medicare or Medicaid; or

(vii) debarment, exclusion, or contract cancellation in any state from Medicare or Medicaid; and

(H) for the two-year period preceding the application date, the following data concerning the applicant, the applicant's affiliates, and the managers of the applicant:

(i) federal or state (any state) criminal misdemeanor arrests or convictions;

(ii) federal or state (any state) tax liens;

(iii) unsatisfied final judgments;

(iv) eviction involving any property or space used as an ambulatory surgical center or health care facility in any state;

(v) injunctive orders from any court; or

(vi) unresolved final federal or state (any state) Medicare or Medicaid audit exceptions.

(2) Upon receipt of the application, the department shall review the application to determine whether it is complete. All documents submitted to the department shall be originals. The address provided on the application shall be the address at which the ASC is operating.

(3) If the department determines that the application for an unlicensed ASC is complete and correct, a representative of the department shall schedule a pre-survey conference with the applicant in order to inform the applicant of the standards for the operation of the ASC. A pre-survey conference may, at the department's discretion, be waived for an applicant of a licensed ASC for which a change of ownership is anticipated.

(4) After a pre-survey conference has been held or waived at the department's discretion and the facility has received an approved architectural inspection conducted by the department, the department may issue a license to an ASC to provide ambulatory surgical services in accordance with these sections.

(c) When it is determined that the facility is in compliance with subsection (b) of this section, the department shall issue the license to the applicant.

(1) Effective date. The license shall be effective on the date the facility is determined to be in compliance with subsection (b) of this section.

(2) Expiration date.

(A) If the effective date of the license is the first day of a month, the license expires on the last day of the 23rd month after issuance.

(B) If the effective date of the license is the second or any subsequent day of a month, the license expires on the last day of the 24th month after issuance.

(d) If an applicant decides not to continue the application process for a license, the application may be withdrawn. The applicant shall submit a written request to withdraw to the department. The department shall acknowledge receipt of the request to withdraw.

(e) During the initial licensing period, the department shall conduct a survey of the ASC to ascertain compliance with the provisions of the Health and Safety Code, Chapter 243, and this chapter.

(1) The ASC shall request that an on-site survey be conducted after the ASC has provided services to a minimum of one patient.

(2) The ASC shall be providing services at the time of the survey.

(3) If the ASC has applied to participate in the federal Medicare program, the Medicare survey may be conducted in conjunction with the licensing survey.

(4) The initial licensing survey may be waived if the ASC provides documented evidence of accreditation by the Joint Commission, the Accreditation Association for Ambulatory Health Care, or the American Association for Accreditation of Ambulatory Surgery Facilities and Medicare deemed status.

*§135.22. Renewal of License.*

(a) The department shall send written notice of expiration of a license to an ambulatory surgical center (ASC) at least 60 days before the expiration date. If the applicant has not received notice, it is the duty of the ASC to notify the department and request a renewal application.

(b) The department shall issue a renewal license to an ASC that meets the minimum standards for a license set forth in these sections.

(1) The ASC shall submit the following to the department no later than 30 days prior to the expiration date of the license:

(A) a completed renewal application form;

(B) a nonrefundable license fee; and

(C) if the ASC is accredited by the Joint Commission, the Accreditation Association for Ambulatory Health Care, or the American Association for Accreditation of Ambulatory Surgery Facilities, documented evidence of current accreditation status.

(2) Renewal licenses shall be valid for two years.

(c) If the applicant fails to timely submit an application and fee in accordance with subsection (b) of this section, the department shall notify the applicant that the ASC shall cease providing ambulatory surgical services. If the ASC can provide the department with sufficient evidence that the submission was completed in a timely manner and all dates were adhered to, the cease to perform shall be dismissed. If the ASC cannot provide sufficient evidence, the ASC shall immediately thereafter return the license by certified mail. If the applicant wishes to provide ambulatory surgical services after the expiration date of the license, the applicant shall reapply for a license under §135.20 of this title (relating to Initial Application and Issuance of License).

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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Lisa Hernandez

General Counsel

Department of State Health Services

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## SUBCHAPTER B. SAFETY REQUIREMENTS FOR NEW AND EXISTING AMBULATORY SURGICAL CENTERS

### **25 TAC §135.41, §135.42**

#### STATUTORY AUTHORITY

The repeals are adopted under the Health and Safety Code, §243.009, concerning rules and minimum standards to protect and promote the public health and welfare by providing for the issuance, renewal, denial, suspension, and revocation of each license; and Government Code, §531.0055, and Health and Safety Code, §1001.075, which authorize the Executive Commissioner of the Health and Human Services Commission to adopt rules and policies necessary for the operation and provision of health and human services by the department and for the administration of Health and Safety Code, Chapter 1001. Review of the rules implements Government Code, §2001.039.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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**SUBCHAPTER B. FIRE PREVENTION AND SAFETY REQUIREMENTS**

**25 TAC §§135.41 - 135.43**

**STATUTORY AUTHORITY**

The new sections are adopted under the Health and Safety Code, §243.009, concerning rules and minimum standards to protect and promote the public health and welfare by providing for the issuance, renewal, denial, suspension, and revocation of each license; and Government Code, §531.0055, and Health and Safety Code, §1001.075, which authorize the Executive Commissioner of the Health and Human Services Commission to adopt rules and policies necessary for the operation and provision of health and human services by the department and for the administration of Health and Safety Code, Chapter 1001. Review of the rules implements Government Code, §2001.039.

*§135.41. Fire Prevention and Protection.*

(a) Compliance. An ambulatory surgical center (ASC) shall comply with the provisions of this section with respect to fire prevention and protection.

(1) Fire inspections. An ASC shall comply with local fire codes.

(2) Fire reporting. Except as required under §135.43(b)(6) of this title (relating to Handling and Storage of Gases, Anesthetics, and Flammable Liquids), an ASC shall report all occurrences of fire to the local fire authority and in writing to the department's facility licensing group manager as soon as possible but not later than 10 calendar days following the occurrence. Any fire occurrence causing injury to a person shall be reported no later than the next business day to the facility licensing group manager by fax, (512) 834-4514, or overnight mail to Department of State Health Services, Facility Licensing Group Manager, Post Office Box 149347, Austin, Texas 78714-9347.

(3) Smoking policy. An ASC shall adopt, implement and enforce a written smoking policy. The policy shall include the minimum provisions of National Fire Protection Association 101, Life Safety Code, 2003 Edition (NFPA 101), §20.7.4. All documents published by National Fire Protection Association (NFPA) as referenced in this section may be obtained by writing or calling the NFPA at the following address or telephone number: National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269-9101 or (800) 344-3555.

(b) Fire extinguishing systems. An ASC shall adopt, implement, and enforce a written policy for periodic inspection, testing and maintenance of fire-fighting equipment, portable fire extinguishers, and when installed sprinkler systems. If installed, fire sprinkler systems shall comply with National Fire Protection Association 13, Standard for the Installation of Sprinkler Systems, 2002 Edition (NFPA 13).

(1) Water-based fire protection systems. All fire sprinkler systems, fire pumps, fire standpipe and hose systems, water storage tanks, and valves and fire department connections shall be inspected, tested and maintained in accordance with National Fire Protection As-

sociation 25, Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems, 2002 Edition.

(2) Portable fire extinguishers. Every portable fire extinguisher located in an ASC or upon ASC property shall be installed, tagged, and maintained in accordance with National Fire Protection Association 10, Standard for Portable Fire Extinguishers, 2002 Edition.

(c) Fire protection and evacuation plan. A plan for the protection of patients in the event of fire and their evacuation from the building when necessary shall be formulated according to NFPA 101, §20.7. Copies of the plan shall be available to all staff.

(1) Posting requirements. An evacuation floor plan shall be prominently and conspicuously posted for display throughout the ASC in public areas that are readily visible to patients, employees, and visitors.

(2) Annual training. Each ASC shall conduct an annual training program for instruction of all personnel in the location and use of fire-fighting equipment. All employees shall be instructed regarding their duties under the fire protection and evacuation plan.

(3) Fire drills. The ASC shall conduct at least one fire drill per shift, per quarter. Each drill shall include the use of communication of alarms, use of fire-fighting equipment, simulation of evacuation of patients, discussion with patients, visitors, other occupants, employees and staff about the evacuation plan. Written reports shall be maintained to include evidence of staff and patient participation. Fire exit drills shall incorporate the minimum requirements of NFPA 101, §§20.7.1.2 through 20.7.2.3.

(4) Fire-fighting equipment. All staff shall be familiar with the locations of fire-fighting equipment. Fire-fighting equipment shall be located so that a person shall not have to travel more than 75 feet from any point to reach the equipment.

(d) Fire alarm system. A fire alarm system shall be installed, maintained and tested, in accordance with National Fire Protection Association 72, National Fire Alarm Code, 2002 Edition (NFPA 72) and NFPA 101, §20.3.4.

(e) System for communicating an alarm of fire. A reliable communication system shall be provided as a means of reporting a fire to the fire department. This is in addition to the automatic alarm transmission to the fire department required by NFPA 101, §20.3.4.4.

(f) Fire department access. As an aid to fire department services, every ASC shall provide the following.

(1) Driveways. The ASC shall maintain driveways, free from all obstructions, to main buildings for fire department apparatus use.

(2) Submission of plans. Upon request, the ASC shall submit a copy of the floor plans of the building to the local fire department officials.

(3) Outside identification. The ASC shall place proper identification on the outside of the main building showing the locations of siamese connections and standpipes as required by the local fire department services.

(g) Fire department protection. When an ASC is located outside of the service area or range of the public fire protection, arrangements shall be made to have the nearest fire department respond in case of a fire.

(h) Physical environment. A facility shall provide a physical environment that protects the health, welfare, and safety of patients,

personnel and the public. The physical premises of the facility and those areas of the facility's surrounding physical structure that are used by the patients (including all stairwells, corridors and passageways) must meet the local building and fire safety codes as they relate to safe access and patient privacy.

*§135.42. General Safety.*

(a) Safety officer. The governing body shall appoint a safety officer who is knowledgeable in safety practices in health care facilities. The safety officer shall carry out the functions of the safety program.

(b) Safety activities.

(1) Incident reports. The safety officer shall establish an incident reporting system which includes a mechanism to ensure that all incidents recorded are evaluated, and documentation is provided to show follow-up and corrective actions.

(2) Safety policies and procedures. Safety policies and procedures for each department or service shall be developed, implemented, and enforced.

(3) Safety training and continuing education. Safety training shall be established as part of new employee orientation and in the continuing education of all employees.

(c) Written authority. The authority of the safety officer to take action, when conditions exist that are a possible threat to life, health, or building damage, shall be defined in writing and approved by the governing body.

(d) Safety manual. Each department or service shall have a safety policy and procedure manual within its own area that becomes a part of the overall facility safety manual.

(e) Emergency communication system. An emergency communication system shall be provided in each facility. The system shall be self-sufficient and capable of operating without reliance on the building's service or emergency power supply. Such system shall have the capability of communicating with the available community or state emergency networks, including police and fire departments.

(f) Fans. All portable fans and ceiling fans shall not be utilized in any patient treatment areas/rooms.

(g) Electrical extension cords and cables. Electrical extension cords and cables shall not be used for permanent wiring. Temporary electrical cords or cables shall be secured and protected to prevent tripping.

*§135.43. Handling and Storage of Gases, Anesthetics, and Flammable Liquids.*

(a) An ambulatory surgical center (ASC) shall comply with the requirements of this section for handling and storage of gases, anesthetics, and flammable liquids. The ASC premises shall be kept free from accumulations of combustible materials not necessary for immediate operation of the facility.

(b) Flammable germicides. If flammable germicides, including alcohol-based products, are used for preoperative surgical skin preparation, the facility shall:

(1) use only self-contained, single-use, pre-measured applicators to apply the surgical skin preparations;

(2) follow all manufacturer product safety warnings and guidelines;

(3) develop, implement, and enforce written policies and procedures outlining the safety precautions required related to the use

of the products, which, at a minimum, shall include minimum drying times, prevention and management of product pooling, parameters related to draping and the use of ignition sources, staff responsibilities related to ensuring safe use of the product, and documentation requirements sufficient to evaluate compliance with the written policies and procedures;

(4) ensure that all staff working in the surgical environment where flammable surgical skin preparation products are in use have received training on product safety and the facility policies and procedures related to the use of the product;

(5) develop, implement and enforce an interdisciplinary team process for the investigation and analysis of all surgical suite fires and alleged violations of the policies; and

(6) provide a written report of all occurrences of surgical suite fires within two business days to the department in care of the facility licensing group, and complete an investigation of the occurrence and develop and implement a corrective action plan within 30 days.

(c) Flammable and nonflammable gases and liquids. Flammability of liquids and gases shall be determined by National Fire Protection Association 329, Handling Releases of Flammable and Combustible Liquids and Gases, 2002 Edition. All documents published by National Fire Protection Association (NFPA) as referenced in this section may be obtained by writing or calling the NFPA at the following address or telephone number: National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269-9101 or (800) 344-3555.

(1) Nonflammable gases (examples include, but are not limited to, oxygen and nitrous oxide) shall be stored and distributed in accordance with Chapter 5 of the National Fire Protection Association 99, Standard for Health Care Facilities, 2002 Edition (NFPA 99).

(A) Medical gases and liquefied medical gases shall be handled in accordance with the requirements of NFPA 99, Chapter 9.

(B) Oxygen shall be administered in accordance with NFPA 99, §9.6.

(2) Piped flammable gas systems intended for use in laboratories and piping systems for fuel gases shall comply with requirements of NFPA 99, §11.11.

(3) Flammable gases shall be stored in accordance with NFPA 99, §11.10.

(4) Flammable and combustible liquids used in laboratories shall be handled and stored in accordance with NFPA 99, §11.7, and National Fire Protection Association 101, Life Safety Code, 2003 Edition, §20.3.2.2.

(5) Other flammable agents shall be stored in accordance with NFPA 99, Chapter 7, Materials.

(d) Alcohol-based hand rubs. Alcohol-based hand rubs (ABHRs) are considered flammable. When used, the ABHRs shall meet the following requirements.

(1) The dispensers may be installed in a corridor so long as the corridor width is six feet or greater. The dispensers shall be installed at least four feet apart.

(2) The maximum individual dispenser fluid capacity is 1.2 liters for dispensers in rooms, corridors, and areas open to corridors, and 2.0 liters for dispensers in suites of rooms.

(3) The dispensers shall not be installed over or directly adjacent to electrical outlets and switches.

(4) Dispensers installed directly over carpeted surfaces shall be permitted only in sprinklered smoke compartments.

(5) Each smoke compartment may contain a maximum aggregate of 10 gallons of ABHR solution in dispensers and a maximum of five gallons in storage.

(e) Gasoline and gasoline powered equipment. No motor vehicles including gasoline powered standby generators or any amount of gasoline shall be located within the ASC building. Other devices which may cause or communicate fire, and which are not necessary for patient treatment or care, shall not be stored within the ASC building. All such devices and materials when necessary shall be used within the building only with precautions ensuring a reasonable degree of safety from fire.

(f) Gas fired appliances. The installation, use, and maintenance of gas fired appliances and gas piping installations shall comply with the National Fire Protection Association 54, National Fuel Gas Code, 2002 Edition. The use of portable gas heaters and unvented open flame heaters is specifically prohibited.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

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Lisa Hernandez  
General Counsel

Department of State Health Services

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## SUBCHAPTER C. PHYSICAL PLANT AND CONSTRUCTION REQUIREMENTS FOR NEW AND EXISTING AMBULATORY SURGICAL CENTERS

### 25 TAC §§135.51 - 135.54

#### STATUTORY AUTHORITY

The repeals are adopted under the Health and Safety Code, §243.009, concerning rules and minimum standards to protect and promote the public health and welfare by providing for the issuance, renewal, denial, suspension, and revocation of each license; and Government Code, §531.0055, and Health and Safety Code, §1001.075, which authorize the Executive Commissioner of the Health and Human Services Commission to adopt rules and policies necessary for the operation and provision of health and human services by the department and for the administration of Health and Safety Code, Chapter 1001. Review of the rules implements Government Code, §2001.039.

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## SUBCHAPTER C. PHYSICAL PLANT AND CONSTRUCTION REQUIREMENTS

### 25 TAC §§135.51 - 135.56

#### STATUTORY AUTHORITY

The new sections are adopted under the Health and Safety Code, §243.009, concerning rules and minimum standards to protect and promote the public health and welfare by providing for the issuance, renewal, denial, suspension, and revocation of each license; and Government Code, §531.0055, and Health and Safety Code, §1001.075, which authorize the Executive Commissioner of the Health and Human Services Commission to adopt rules and policies necessary for the operation and provision of health and human services by the department and for the administration of Health and Safety Code, Chapter 1001. Review of the rules implements Government Code, §2001.039.

*§135.52. Construction Requirements for a New Ambulatory Surgical Center.*

(a) Ambulatory surgical center (ASC) location. Any proposed new ASC shall be easily accessible to the community and to service vehicles such as delivery trucks, ambulances, and fire protection apparatus. No building may be converted for use as an ASC which, because of its location, physical condition, state of repair, or arrangement of facilities, would be hazardous to the health and safety of the patients. An ASC may be a distinct separate part of an existing hospital, it may occupy an entire separate independent structure, or it may be located within another building such as an office building or commercial building.

(1) Means of egress. An ASC shall have at least two exits remotely located in accordance with National Fire Protection Association (NFPA) 101, Life Safety Code, 2003 Edition (NFPA 101), §20.2.4.1. When a required means of egress from the ASC is through another portion of the building, that means of egress shall comply with the requirements of NFPA 101 which are applicable to the occupancy of that other building. Such means of egress shall be open, available, unlocked, unrestricted, and lighted at all times during the ASC hours of operation. All documents published by National Fire Protection Association (NFPA) as referenced in this section may be obtained by writing or calling the NFPA at the following address or telephone number: National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02269-9101 or 800-344-3555.

(2) Hazardous location.

(A) Underground and above ground hazards. A new ASC or an addition(s) to an existing ASC shall not be constructed within 150 feet of easement boundaries or setbacks of hazardous underground locations including but not limited to liquid butane or propane, liquid petroleum or natural gas transmission lines, high pressure lines, and not within the easement of high voltage electrical lines.

(B) Fire hazards. A new ASC and an addition to an existing ASC shall not be built within 300 feet of above ground or underground storage tanks containing liquid petroleum or other flammable liquids used in connection with a bulk plant, marine terminal, aircraft

refueling, bottling plant of a liquefied petroleum gas installation, or near other hazardous or hazard producing plants.

(3) Undesirable locations.

(A) Nuisance producing sites. A new ASC shall not be located near nuisance producing sites such as industrial sites, feed lots, sanitary landfills, or manufacturing plants which produce excessive noise or air pollution.

(B) Flood plains.

(i) New construction. When a new ASC is constructed in a designated 100-year flood plain, the building finished floor elevation shall be one foot above the set base flood plain elevation. The building shall meet all local flood code ordinances and local flood control requirements.

(ii) Previously licensed ASC. To obtain a license as an ASC, a previously licensed ASC and an existing building or a portion of an existing building located in a designated 100-year flood plain shall meet the requirement of subparagraph (B)(i) of this paragraph.

(iii) Existing ASC. ASC required functional components shall be constructed above the designated flood plain in a new addition to an existing ASC located in a designated 100-year flood plain. The new addition shall meet the requirement of subparagraph (B)(i) of this paragraph.

(b) ASC site. The ASC site shall include paved roads, walkways, and parking in accordance with the requirements set out in this subsection.

(1) Paved roads and walkways.

(A) Paved roads shall be provided within lot lines for access from public roads to the main entrance and to service entrances.

(B) Finished surface walkways shall be provided for pedestrians. When public transportation or walkways serve the site, finished surface walkways or paved roads shall extend from the public conveyance to the building entrance.

(2) Parking and disability requirements.

(A) Parking requirements. Off-street parking shall be provided at the minimum ratio of two spaces for each operating room, one space for each staff member, and one visitor's space for each operating room.

(B) Design for the handicapped. Special considerations benefiting handicapped staff, visitors, and patients shall be provided. Each ASC shall comply with the Americans with Disabilities Act (ADA) of 1990, Public Law 101 - 336, 42 United States Code, Chapter 126, and Title 36 Code of Federal Regulations, Part 1191, Appendix A, Accessibility Guidelines for Buildings and Facilities or 16 Texas Administrative Code, §68.20 (relating to Buildings and Facilities Subject to Compliance with the Texas Accessibility Standards), Texas Accessibility Standards (TAS), April 1, 1994 edition, issued by the Texas Department of Licensing and Regulation, under the Texas Architectural Barriers Act, Texas Government Code, Chapter 469.

(c) Building design and construction requirements. Every building and every portion thereof shall be designed and constructed to sustain all dead and live loads in accordance with accepted engineering practices and standards and local governing building codes. Where there is no local governing building code, the ASC shall be constructed in accordance with the International Building Code, 2003 edition, published by the International Code Council, 500 New Jersey Avenue, Northwest, 6th Floor, Washington, District of Columbia 20001-2070, (888) 422-7233.

(1) General architectural requirements. All new construction, including conversion of an existing building to an ASC or establishing a separately licensed ASC within another existing building, shall comply with NFPA 101, Chapter 20, New Ambulatory Health Care Occupancies, of the National Fire Protection Association 101, Life Safety Code, 2003 Edition (NFPA 101), and Subchapters B and C of this chapter (relating to Fire Prevention and Safety Requirements, and Physical Plant and Construction Requirements, respectively). Construction documents shall be submitted to the department in accordance with §135.54 of this title (relating to Preparation, Submittal, Review and Approval of Plans, and Retention of Records).

(A) Construction types for multiple building occupancy.

(i) When an ASC is part of a larger building which complies with NFPA 101, §20.1.6, Minimum Construction Requirements for (fire resistance) construction type, the designated ASC shall be separated from the remainder of the building with a minimum of one-hour fire-rated construction.

(ii) When an ASC is located in a multistory building of two or more stories, the entire building shall meet the construction requirements of NFPA 101, §20.1.6.3. An ASC shall not be located in a multistory building which does not comply with the minimum construction requirements of NFPA 101, §20.1.6.3.

(iii) When an ASC is part of a one-story building that does not comply with the construction requirements of NFPA 101, §20.1.6.2, the ASC shall be separated from the remainder of the building with a two-hour fire-rated construction. The designated ASC portion shall have the construction type upgraded to comply with NFPA 101, §20.1.6.2.

(B) Special design provisions. Special provisions shall be made in the design of a facility if located in a region where local experience shows loss of life or extensive damage to buildings resulting from hurricanes, tornadoes, or floods.

(2) Physical environment. A physical environment that protects the health, welfare, and safety of patients, personnel, and the public shall be provided in each facility. The physical premises of the facility and those areas of the facility's physical structure that are used by the patients (including all stairwells, corridors, and passageways) shall meet the local building and fire safety codes and the requirements of this chapter.

(3) Other regulations. The more stringent standard, code or requirement shall apply when a difference in requirements for construction exists.

(4) Exceeding minimum requirements. Nothing in this subchapter shall be construed to prohibit a better type of building construction, more exits, or otherwise safer conditions than the minimum requirements specified in this subchapter.

(5) Equivalency. Nothing in this subchapter is intended to prevent the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness, durability, and safety to those prescribed by this subchapter, provided technical documentation which demonstrates equivalency is submitted to the department for approval.

(6) Freestanding buildings (not for patient use). Separate freestanding buildings for nonpatient use such as the heating plant, boiler plant, laundry, repair workshops, or general storage may be of unprotected noncombustible construction, protected noncombustible construction, or fire-resistive construction and be designed and con-

structured in accordance with other occupancy classifications requirements listed in NFPA 101.

(d) Spatial requirements.

(1) Administration and public areas.

(A) Entrance. Entrances shall be located at grade level, be accessible to individuals with disabilities, and be protected against inclement weather from the point of passenger loading/unloading to the building entrance. When an ASC is located on a floor above grade level, elevators shall be accessible and shall meet the requirements of §135.53 of this title (relating to Elevators, Escalators, and Conveyors).

(B) Waiting area. A waiting area or lobby shall be provided within the ASC and include having the following rooms and items:

- (i) public toilet facilities;
- (ii) telephone(s) for public use; and
- (iii) access to potable drinking water.

(C) Reception area. A designated reception area with desk or counter shall be provided.

(D) Interview space(s). Space shall be provided for private interviews or family members, relating to social services, credit, or admission.

(E) General or individual office(s). An office(s) shall be provided for business transactions, records, and administrative and professional staff.

(F) Medical records area. The medical records area shall have adequate space for reviewing, dictating, sorting, or recording records. If electronic imaging devices are employed (i.e., microfilm, digital, or optical disc), the medical records area shall have adequate space for transcribing records in the electronic format. Medical record storage space shall be located within a secure designated area under direct visual supervision of administrative staff.

(G) General storage room.

(i) A minimum of 30 square feet per operating room shall be provided exclusive of soiled holding, sterile supplies, clean storage, drug storage, locker rooms, and surgical equipment storage. General storage may be located in one or more rooms or closets, and shall be located outside of the patient treatment areas.

(ii) General storage room(s) shall be separated from adjacent areas by fire-rated construction in accordance with the NFPA 101, §38.3.2.1 and §38.3.2.2.

(H) Wheelchair storage space or alcove. Storage space for wheelchairs shall be provided and shall be out of the direct line of traffic.

(2) Engineering services and equipment areas. Equipment rooms with adequate space shall be provided for mechanical and electrical equipment. These areas shall be separate from public, patient, and staff areas.

(3) Examination room. An examination room is not required, but when provided, the room shall have:

(A) a minimum clear floor area of at least 80 square feet exclusive of fixed or moveable cabinets, counters, or shelves; and

(B) a work counter with space for writing and a hand washing fixture with hands-free operable controls.

(4) Janitor's closet. In addition to the janitor's closet exclusive to the surgery suite, a sufficient number of janitor's closets shall be provided throughout the facility to maintain a clean and sanitary environment. The closet shall contain a floor receptor or service sink and storage space for housekeeping supplies and equipment.

(5) Laboratory.

(A) General. Laboratory services shall be provided within the ASC or through a contract or other arrangement with a hospital or accredited laboratory.

(B) Special requirements. When the laboratory is located on site the following minimum items shall be provided:

(i) a room with work counter, utility sink, and storage cabinets or closet(s); and

(ii) specimen collection facilities. For dip stick urinalysis, urine collection rooms shall be equipped with a water closet and lavatory. Blood collection facilities shall have space for a chair, work counter, and a hand washing fixture with hands-free operable controls.

(C) Code compliance. An on-site laboratory shall comply with the following codes.

(i) Construction for fire protection in laboratories employing quantities of flammable, combustible, or other hazardous material shall be in accordance with the National Fire Protection Association 99, Health Care Facilities, 2002 Edition, (NFPA 99).

(ii) Laboratories shall comply with the requirements of NFPA 99, Health Care Facilities, 2002 Edition, Chapter 11, as applicable and the requirements of NFPA 45, Standards on Fire Protection for Laboratories Using Chemicals, 2000 Edition, as applicable.

(6) Laundry and linen processing area(s). Laundry and linen processing may be done within the center or off site at a commercial laundry.

(A) On-site linen processing. When on-site linen processing is provided, soiled and clean processing operations shall be separated and arranged to provide a one-way traffic pattern from soiled to clean areas. The following rooms and items shall be provided:

(i) a soiled linen processing room which includes areas for receiving, holding, sorting, and washing;

(ii) a clean linen processing room which includes areas for drying, sorting, folding, and holding prior to distribution;

(iii) supply storage cabinets in the soiled and clean linen processing rooms;

(iv) a hand washing fixture with hands-free operable controls within the soiled linen processing room; and

(v) a storage room for clean linen located within the surgical suite. Clean linen storage may be combined with the clean work room.

(B) Off-site linen processing. When linen is processed off site, the following rooms or items shall be provided:

(i) a storage room for clean linen located within the surgical suite. Clean linen storage may be combined with the clean work room; and

(ii) a soiled linen holding room or area located within the surgical suite. Soiled linen holding may be combined with the soiled workroom.



(7) Medical waste processing. Space and facilities shall be provided for the safe storage and disposal of waste as appropriate for the material being handled and in compliance with all applicable rules and regulations.

(8) Pharmacy. A pharmacy work room or alcove shall be provided and located separate from patient and public areas and under the direct supervision of staff. A work counter, refrigerator, medication storage, and locked storage for biologicals and drugs shall be provided. A hand washing fixture with hands-free operable controls shall be located in the pharmacy room or alcove.

(9) Postoperative recovery suite.

(A) General. A postoperative recovery suite shall be distinct and separate from preoperative areas. The postoperative recovery suite shall be arranged to provide a one-way traffic pattern from the restricted surgical corridor to the postoperative recovery suite, and then to the extended observation rooms or discharge.

(B) Postanesthesia care unit. A minimum of one patient station per operating room, plus one additional station, shall be provided.

(i) In a multiple-bed postoperative recovery area, the clearance between the side of a bed/gurney and a wall/partition shall be a minimum of three feet. The clearance between sides of beds/gurneys shall be a minimum of four feet six inches. The minimum distance at the foot of the bed/gurney shall not be less than six feet for single load area/room or nine feet for double load area/room. Four feet of the passage space at the foot of the bed may be shared between two beds/gurneys. The fixed and moveable cabinets and shelves shall not encroach upon the bed/gurney clear floor space/area.

(ii) The minimum clear floor space in a private postoperative recovery room shall be 100 square feet exclusive of aisles and fixed and moveable cabinets and selves. A minimum of nine feet width shall be provided for the head wall.

(C) Patient toilet. A toilet room with a water closet and a hand washing fixture with hands-free operable controls shall be provided. The toilet room may be shared with the preoperative patient holding area, if located conveniently between both areas.

(D) Hand washing fixture. One hand washing fixture with hands-free operable controls shall be provided for every four recovery beds or fraction thereof in open wards. Fixtures shall be uniformly distributed. One hand washing fixture shall be provided within each single-bed recovery room.

(E) Extended observation rooms. Separate supervised rooms or areas may be provided for patients who are sufficiently stabilized to leave the postanesthesia care unit, but require additional time in the facility for observation or comfort measures prior to being discharged.

(i) When individual rooms are provided for extended observation, the rooms shall have an area of at least 60 square feet. When such rooms include a bed or recliner, a minimum clearance of three feet at the foot and on each side of the bed or recliner shall be provided.

(ii) When an open or ward area for extended observation is provided, the minimum clearance from the bed or recliner to the side wall shall not be less than three feet; and a space of four feet shall be provided at the foot of each bed or recliner. The minimum clearance between beds or recliners shall not be less than three feet.

(iii) A toilet room with a water closet and a hand washing fixture with hands-free operable controls shall be provided.

The toilet room may be shared with the postoperative recovery area, if located conveniently between both areas.

(10) Preoperative patient holding room.

(A) General. A preoperative holding area shall be provided and arranged in a one-way traffic pattern so that patients entering from outside the surgical suite can change, gown, and move directly into the restricted corridor of the surgical suite. The holding area shall be separate from the postoperative recovery suite and the restricted corridor.

(B) Patient station. A minimum of one patient station per operating room shall be provided.

(i) When individual rooms are provided, the minimum clear floor space in a private preoperative holding room shall be 80 square feet exclusive of aisles and fixed and moveable cabinets and shelves. The rooms shall include a bed or recliner with a minimum clearance of three feet at the foot and on each side of the bed or recliner.

(ii) In a multiple-bed preoperative holding area, a minimum area of 60 square feet shall be provided for each patient station. The minimum clearance from the gurney or bed to a sidewall shall not be less than three feet. A space of four feet shall be provided at the foot of the gurney or bed and the minimum clearance between gurneys or beds shall not be less than four feet six inches.

(iii) Space shall be made available for storing and securing patient's personal effects.

(iv) One hand washing fixture with hands-free operable controls shall be provided for every four preoperative beds or fraction thereof in open wards. Fixtures shall be uniformly distributed. One hand washing fixture shall be provided within each single-bed preoperative holding room.

(C) Patient toilet. A toilet room with handicapped accessible water closet and hand washing facilities shall be provided. The toilet room may be shared with the postoperative recovery suite, if located conveniently between both areas.

(D) Duty station. A hand washing fixture with hands-free operable controls and a counter or shelf space for writing shall be provided for staff use within or convenient to the preoperative area. The staff hand washing fixture with hands-free operable controls shall be separate from and in addition to patient toilet accommodations.

(11) Radiology.

(A) Special requirements. When radiology services are provided on site, the following minimum facilities shall be provided:

(i) film processing facilities, if used;

(ii) viewing capabilities;

(iii) storage facilities for exposed film, if used, located in rooms or areas constructed in accordance with the NFPA 101, §38.3.2.1 and §38.3.2.2; and

(iv) dressing area(s) shall be required, depending on services provided, with convenient access to toilets, and may be shared with patient changing/preoperative rooms.

(B) Fluoroscopy room. When fluoroscopy services are provided on site in a dedicated fluoroscopy room, a toilet room with a water closet and a hand washing fixture with hands-free operable controls shall be directly accessible to the room.

(12) Soiled workroom. In addition to the soiled workroom provided in the surgical suite, a separate soiled workroom(s) shall be

required when a treatment room is provided, except as allowed in subparagraph (B) of this paragraph.

(A) Special requirements. The workroom(s) shall contain a clinical sink or equivalent flushing type fixture, work counter, designated space for waste and linen receptacles, and a hand washing fixture with hands-free operable controls.

(B) Shared functions. The soiled workroom required in support of a treatment room may be combined with a surgical suite soiled work room with two means of entry. A separate door into the soiled workroom shall serve a treatment room located outside the surgical suite.

(13) Surgical staff clothing change area.

(A) Surgical staff changing rooms. Appropriately sized areas shall be provided for male and female personnel working within the surgical suite. These areas shall contain lockers, showers, toilets, hand washing fixtures with hands-free operable controls, and space to change into scrub suits and boots. Separate locker/changing rooms shall be provided for male and female staff. The shower and toilet room(s) may be unisex. These areas shall be arranged to provide a traffic pattern so that personnel entering from outside the surgical suite can shower, change, and move directly into the restricted areas of the surgical suite.

(B) Surgical staff lounge. When a surgical staff lounge is provided, the lounge shall be located to permit the use without leaving the surgical suite and may be accessed from the clothing changing rooms. The surgical staff lounge shall not have direct access from outside the surgical suite. When the lounge is remote from the clothing change rooms, toilet facilities and a hand washing fixture with hands-free operable controls accessible from the lounge shall be provided.

(14) Sterilizing facilities. A system for sterilizing equipment and supplies shall be provided. Sterilizing procedures may be done on site or off site, or disposables may be used to satisfy functional needs.

(A) Off-site sterilizing. When sterilizing is provided off site and disposables and prepackage surgical supplies are used, the following rooms shall be provided near the operating room.

(i) Soiled holding room. A room for receiving contaminated/soiled material and equipment from the operating room shall be provided. The room shall be physically separate from all other areas of the suite. The room shall include a work counter(s) or a table(s), clinical sink or equivalent flushing type fixture, equipment for initial disinfection and preparation for transport to off-site sterilizing, and a hand washing fixture with hands-free operable controls. The soiled holding room may be combined with the surgical suite soiled workroom.

(ii) Clean workroom. A clean workroom shall be provided for the exclusive use of the surgical suite. The workroom shall contain a work counter with space for receiving, disassembling and organizing clean supplies, storage cabinets or shelving, and a hand washing fixture with hands-free operable controls.

(iii) Sterilizer equipment. Sterilizer equipment shall be located in a separate room convenient to the operating room(s), in an alcove adjacent to the restricted corridor, or in the clean workroom.

(B) On-site sterilizing facilities. When sterilizing facilities are provided on site they shall be located near the operating room and provide the following rooms.

(i) Receiving/decontamination room. The receiving/decontamination room shall be physically separate from all other areas of the surgical suite. The room shall include a work counter(s) or table(s), clinical sink or equivalent flushing type fixture, equipment for initial washing/disinfection, and a hand washing fixture with hands-free operable controls. Pass-through dutch doors, windows, and washer/sterilizer decontaminators shall serve in delivering material to the clean workroom. The receiving/decontamination room may be combined with the surgical suite soiled workroom.

(ii) Clean/assembly workroom. The clean/assembly workroom shall include a counter(s) or table(s) with space for organizing, assembling, and packaging of medical/surgical supplies and equipment, equipment for terminal sterilizing, and a hand washing fixture with hands-free operable controls. Clean and soiled work areas shall be physically separated.

(iii) Sterile storage. A storage room for clean and sterile supplies shall be provided. The storage room shall have adequate areas and counters for breakdown of manufacturers' clean/sterile medical/surgical supplies. This room may be combined with the clean assembly/workroom.

(iv) Cart storage room or alcove. The storage space for distribution carts shall be adjacent to clean and sterile storage area(s) and close to main distribution points.

(15) Surgical suite. The surgical suite shall be arranged to preclude unrelated traffic through the suite. The surgical suite shall contain at least one operating room and all surgical service areas required under subparagraph (B) of this paragraph.

(A) Operating room. The operating room(s) shall have a clear floor area of at least 240 square feet exclusive of fixed or moveable cabinets, counters, or shelves. The minimum clear dimension between built-in cabinets, counters, and shelves shall be 14 feet.

(B) Surgical service areas.

(i) Restricted corridor. The restricted corridor shall serve as the primary passageway for staff and patients within the surgical suite. The following rooms and areas shall have direct access to the restricted corridor:

- (I) preoperative patient holding area;
- (II) operating room(s);
- (III) postoperative recovery suite;
- (IV) soiled workroom;
- (V) clean workroom;
- (VI) janitor's closet;
- (VII) equipment storage;
- (VIII) sterilizing facilities;
- (IX) anesthesia workroom when provided; and
- (X) area for emergency crash cart.

(ii) Soiled workroom. A soiled workroom shall be provided for the exclusive use of the surgical suite staff. The workroom shall contain a clinical sink or equivalent flushing type fixture, work counter, designated space for waste and linen receptacles, and a hand washing fixture with hands-free operable controls. The soiled workroom shall not have direct connection with operating room(s) or other sterile activity room(s).

(iii) Clean linen storage. A storage room or alcove shall be provided for storing clean linen.

(iv) Scrub facilities. A scrub station shall be located in the restricted corridor within five feet of the entrance of each operating room. One scrub station with dual faucets with hands free operable controls may serve two operating rooms if the scrub stations are located adjacent to the entrance of both operating rooms. Scrub facilities shall be arranged to minimize any incidental splatter on nearby personnel, medical equipment, or supply carts. Viewing panels shall be provided for observation of the surgical room interior. The scrub sinks shall be recessed out of the main traffic areas. The scrub sink alcove shall be located within the restricted areas of the surgical suite. Scrub sinks shall not be located inside the sterile area.

(v) Janitor's closet. A janitor's closet shall be provided for the exclusive use of the surgical suite. The closet shall contain a floor receptor or service sink and storage space for housekeeping supplies and equipment.

(vi) Equipment storage. A room, alcove, or designated area shall be provided for storing equipment and supplies used in the surgical suite. The storage room or area shall be a minimum of 50 square feet per operating room.

(vii) Medical gas storage room. When provided or required by NFPA 101, a medical gas storage room shall comply with the requirements of NFPA 99, 2002, Chapter 5, Gas and Vacuum Systems.

(viii) Area for emergency crash cart. An area or alcove located out of traffic and convenient to the operating room(s) shall be provided for an emergency crash cart.

(ix) Stretcher storage area. An area or alcove shall be located convenient for use and out of the direct line of traffic for the storage of stretchers as required. Stored stretchers shall not encroach on corridor widths.

(16) Treatment room.

(A) A treatment room is not required, but when provided, it shall be used only for minor procedures.

(B) If inhalation anesthesia is administered in the treatment room, the room shall comply with NFPA 99, §14.4.1 requirements for an anesthetizing location.

(C) The treatment room shall have a clear floor area of at least 120 square feet exclusive of fixed or moveable cabinets, counters, or shelves.

(D) The treatment room shall contain an examination table, a counter for writing, and a hand washing fixture with hands-free operable controls.

(e) General detail and finish requirements. Details and finishes in new construction projects, including additions and alterations, shall be in compliance with this subsection, with NFPA 101, Chapter 20, and with local building codes.

(1) General detail requirements.

(A) Fire safety. Fire safety features, including smoke compartmentation, means of egress, automatic extinguishing systems, inspections, smoking regulations, and other details relating to fire prevention and fire protection shall comply with NFPA 101, Chapter 20. The Fire Safety Evaluation System for Health Care Occupancies contained in the National Fire Protection Association 101A, Alternative Approaches to Life Safety, 2001 Edition, Chapter 3, shall not be used in new building construction, renovations, or additions to existing ASCs.

(B) Exits, corridors and doors.

(i) Number of exits. A facility shall provide two exits remote from each other in accordance with NFPA 101, §20.2.4.1. At least one exit door shall be accessible by an ambulance from the outside. This door may also serve as an entry for loading or receiving goods.

(ii) Encroachment into the means of egress. Items such as drinking fountains, telephone booths or stations, and vending machines shall be so located as to not project into and restrict exit corridor traffic or reduce the exit corridor width below the required minimum. Portable equipment shall not be stored so as to project into and restrict exit corridor traffic or reduce the exit corridor width below the required minimum.

(iii) Corridors.

(I) Public corridor. The minimum clear and unobstructed width of a public corridor shall be at least four feet.

(II) Communicating corridor. The communicating corridor shall be used to convey patients by stretcher, gurney, or bed.

(III) The communicating corridor shall link the preoperative holding area, operating room(s), and postoperative recovery suite, and shall be continuous to at least one exit.

(IV) The minimum clear and unobstructed width of the communicating corridor shall be eight feet.

(iv) Door types. Doors at all openings between corridors and rooms or spaces subject to occupancy shall be swing type. Elevator doors are excluded from this requirement.

(v) Door swing. Doors, except doors to spaces such as small closets which are not subject to occupancy, shall not swing into corridors in a manner that might obstruct traffic flow or reduce the required corridor width. Large walk-in type closets are considered as occupiable spaces.

(vi) Patient access doors. The minimum width of doors for patient access to examination and consultation rooms shall be three feet. The minimum width of doors requiring access for beds and gurneys (preoperative holding area, operating room, postoperative recovery suite, treatment rooms) shall be three feet eight inches.

(vii) Emergency access. Rooms containing a water closet, intended for patient use, shall be provided with at least one door having hardware which will permit access from the outside in any emergency. Door leaf width of such doors shall not be less than 36 inches.

(viii) Sliding doors. Horizontal sliding doors serving an occupant load of fewer than 10 shall be permitted. The area served by the door shall have no high hazard contents. The door shall be readily operable from either side without special knowledge or effort. The force required to operate the door in the direction of door travel shall be not more than 30 pounds per foot to set the door in motion, and shall be not more than 15 pounds per foot to close the door or open in the minimum required width. The door assembly shall comply with any required fire protection rating, and, where rated, shall be self-closing or automatic closing. The sliding doors opening to the egress corridor doors shall have a latch or other mechanism that ensures that the doors will not rebound into a partially open position if forcefully closed. The sliding doors may have breakaway provisions and shall be installed to resist passage of smoke. The latching sliding panel shall have a minimum clear opening of 36 inches in the fully open position. The fixed panels may have recessed tracks.

(ix) Fire doors. All fire doors shall be listed by an independent testing laboratory and shall meet the construction requirements for fire doors in National Fire Protection Association 80, Standard for Fire Doors and Fire Windows, 1999 Edition. Reference to a labeled door shall be construed to include labeled frame and hardware.

(C) Glazing. Glass doors, lights, sidelights, borrowed lights, and windows located within 12 inches of a door jamb or with a bottom-frame height of less than 18 inches and a top-frame height of more than 36 inches above the finished floor which may be broken accidentally by pedestrian traffic shall be glazed with safety glass or plastic glazing material that will resist breaking and will not create dangerous cutting edges when broken. Similar materials shall be used for wall openings in activity areas such as recreation and exercise rooms, unless otherwise required for fire safety. Safety glass, tempered or plastic glazing materials shall be used for shower doors and bath enclosures, interior windows and doors. Plastic and similar materials used for glazing shall comply with the flame spread ratings of NFPA 101, §18.3.3.

(D) Grab bars. Grab bars shall be provided at patient toilets and showers. The bars shall be one and one-half inches in diameter, shall have either one and one-fourth or one and one-half inches clearance to walls, and shall have sufficient strength and anchorage to sustain a concentrated vertical or horizontal load of 250 pounds. Grab bars intended for use by the disabled shall also comply with ADA requirements.

(E) Hand washing facilities. Location and arrangement of fittings for hand washing facilities shall permit their proper use and operation. Hand washing fixtures with hands-free controls shall be provided in each examination room, treatment room, preoperative area, postoperative recovery suite, extended observation room or area, soiled utility room, fluoroscopy room, clean work room, and toilet room. Particular care shall be given to the clearances required for blade-type operating handles. Lavatories and hand washing facilities shall be securely anchored to withstand an applied vertical load of not less than 250 pounds on the front of the fixture. In addition to the specific areas noted, hand washing facilities shall be conveniently located for staff use in rooms and areas noted under spatial requirements in subsection (d) of this section and throughout the center where patient care services are provided.

(F) Soap dispensers. A liquid or foam soap dispenser shall be located at each hand washing facility.

(G) Hand drying. Provisions for hand drying shall be included at all hand washing facilities. There shall be hot air dryers or individual paper or cloth units enclosed in such a way as to provide protection against dust or soil and ensure single-unit dispensing.

(H) Signage. A sign shall be posted at the entrance to each toilet/restroom to identify the facility for public, staff, or patient use.

(I) Ceiling heights. The minimum ceiling height shall be eight feet six inches with the following exceptions.

(i) Rooms containing ceiling-mounted light fixtures or equipment. Operating rooms or other rooms containing ceiling-mounted light fixtures or equipment shall have ceiling heights of not less than nine feet. Additional ceiling height may be required to accommodate special fixtures or equipment.

(ii) Minor rooms. Ceilings in storage rooms, toilet rooms, and other minor rooms shall be not less than seven feet six inches

(iii) Boiler rooms. Boiler rooms shall have ceiling clearances not less than two feet six inches above the main boiler header and connecting piping.

(iv) Overhead clearance. Suspended tracks, rails, pipes, signs, lights, door closers, exit signs, and other fixtures that protrude into the path of normal traffic shall not be less than six feet eight inches above the finished floor.

(J) Areas producing impact noises. Recreation rooms, exercise rooms, and similar spaces where impact noises may be generated shall not be located directly over operating rooms or special procedure rooms unless special provisions are made to minimize noise.

(K) Rooms with heat-producing equipment. Rooms containing heat-producing equipment, such as mechanical and electrical equipment and laundry rooms, shall be insulated and ventilated to prevent floors of any occupied room located above it from exceeding a temperature differential of 10 degrees Fahrenheit above the ambient room temperature.

(L) Radiation protection. Shielding shall be designed, tested, and approved by a medical physicist licensed under the Medical Physics Practice Act, Occupations Code, Chapter 602. The ASC shall obtain a certificate of registration issued by the Radiation Safety Licensing Branch to use radiation machines.

(f) General finishes requirements.

(1) Privacy screens, cubicle curtains, and draperies.

(A) Cubicle curtains or privacy screens shall be provided to assure patient privacy when required or requested by a patient.

(B) Cubicle curtains, draperies and other hanging fabrics shall be noncombustible or flame retardant and shall pass both the small-scale and the large-scale tests of National Fire Protection Association 701, Standard Methods of Fire Tests for Flame-Resistant Textiles and Films, 1999 Edition. Copies of laboratory test reports for installed materials shall be submitted to the department at the time of the final construction inspection.

(2) Flame spread, smoke development and noxious gases. Flame spread and smoke developed limitations of interior finishes shall comply with Table 4 of §135.56(d) of this title (relating to Construction Tables) and NFPA 101, §10.2. The use of materials known to produce large or concentrated amounts of noxious or toxic gases shall not be used in exit accesses or in patient areas. Copies of laboratory test reports for installed materials tested in accordance with National Fire Protection Association 255, Standard Method of Test of Surface Burning Characteristics of Building Materials, 2000 Edition, and National Fire Protection Association 258, Standard Research Test Method for Determining Smoke Generation of Solid Materials, 2001 Edition, shall be provided.

(3) Floor finishes.

(A) Flooring shall be easy to clean and have wear resistance appropriate for the location involved. Floors that are subject to traffic while wet (such as shower and bath areas, and similar work areas) shall have a nonslip surface. In all areas frequently subject to wet cleaning methods, floor materials shall not be physically affected by germicidal and cleaning solutions. The following are acceptable floor finishes:

(i) painted concrete for mechanical, electrical, communication rooms, and janitor's closets;

(ii) vinyl and vinyl composition tiles and sheets tiles for offices, lobbies, administrative areas, storage, staff and public toilet rooms, examination rooms, support spaces, and nontreatment areas;

(iii) monolithic or seamless flooring shall be provided for all operating rooms, special procedure rooms, treatment rooms, patient toilet rooms, soiled workrooms, and sterilizing facilities. Seamless flooring shall be impervious to water, coved and installed integral with the base, tightly sealed to the wall, and without voids that can harbor insects or retain dirt particles. The base shall not be less than six inches in height. Welded joint flooring is acceptable;

(iv) marble, ceramic and quarry tile for offices, lobbies, staff and public toilet rooms, administrative areas, wet areas, and similar spaces;

(v) carpet flooring for offices, lobbies, and administrative areas. Carpeting shall not be installed in any preoperative holding, toilet rooms, treatment rooms, examination rooms, and similar spaces; and

(vi) terrazzo for offices, lobbies, administrative areas, and similar spaces.

(B) Threshold and expansion joint covers. Thresholds at doorways shall not exceed 3/4 inch in height for exterior sliding doors or 1/2 inch for other type doors. Raised thresholds and floor level changes at accessible doorways shall be beveled with a slope no greater than 1:2. Expansion joint covers shall not exceed 1/2 inch in height and shall have beveled edges with a slope no greater than 1:2.

(4) Wall finishes. Wall finishes shall be smooth, washable, moisture resistant, and cleanable by standard housekeeping practices. Wall finishes shall be in compliance with the requirements of NFPA 101, §38.3.3, relating to flame spread.

(A) Finishes at plumbing fixtures. Wall finishes shall be water-resistant in the immediate area of plumbing fixtures.

(B) Wet cleaning methods. Wall finishes in areas subject to frequent wet cleaning methods shall be impervious to water, tightly sealed, and without voids.

(5) Ceiling finishes. All occupied rooms and spaces shall be provided with finished ceilings, unless otherwise noted. Ceilings which are a part of a rated roof/ceiling assembly or a floor/ceiling assembly shall be constructed of listed components and installed in accordance with the listing. Three types of ceilings that are required in various areas of the ASC are:

(A) ordinary ceilings. Ceilings are required in all areas or rooms in the ASC unless otherwise noted. This includes ceilings such as acoustical tiles installed in a metal grid which are dry cleanable with equipment used in daily housekeeping activities such as dusters and vacuum cleaners;

(B) washable ceilings. When ceilings that dictate this type of cleaning or protection for these spaces such as soil utility or soil workroom, the ceilings shall be made of washable, smooth, moisture impervious materials such as painted lay-in gypsum wallboard or vinyl faced acoustic tile in a metal grid; and

(C) monolithic ceilings. Ceilings which are monolithic from wall to wall (painted solid gypsum wallboard), smooth and without fissures, open joints, or crevices and with a washable and moisture impervious finish shall be provided in the operating rooms, special procedure rooms, and sterilizing facilities.

(D) Nonceiling requirements. Finished ceilings may be omitted in mechanical, electrical, communication rooms and equipment spaces, shops, and similar spaces unless required for fire-resistive purposes.

(6) Floor, wall, and ceiling penetrations. Floor, wall, and ceiling penetrations by pipes, ducts, and conduits, or any direct open-

ings shall be tightly sealed to minimize entry of dirt particles, rodents, and insects. Joints of structural elements shall be similarly sealed.

(7) Materials finishes. Materials known to produce noxious gases when burned shall not be used for mattresses, upholstery, and wall finishes.

(g) General mechanical requirements. This subsection contains requirements for mechanical systems; air conditioning, heating and ventilating systems; steam and hot and cold water systems; and thermal and acoustical insulation.

(1) Cost. All mechanical systems shall be designed for overall efficiency and life cycle costing, including operational costs. Recognized engineering practices shall be followed to achieve the most economical and effective results except that in no case shall patient care or safety be sacrificed for conservation.

(2) Equipment location. Mechanical equipment may be located indoors or outdoors (when in a weatherproof enclosure), or in a separate building(s).

(3) Vibration isolation. Mechanical equipment shall be mounted on vibration isolators as required to prevent unacceptable structure-borne vibration. Ducts, pipes, etc. connected to mechanical equipment which is a source of vibration shall be isolated from the equipment with vibration isolators.

(4) Performance and acceptance. Prior to completion and acceptance of the facility, all mechanical systems shall be tested, balanced, and operated to demonstrate to the design engineer or his representative that the installation and performance of these systems conform to the requirements of the plans and specifications.

(A) Material lists. Upon completion of the contract, the owner shall obtain from the construction contractor parts lists and procurement information with numbers and descriptions for each piece of equipment.

(B) Instructions. Upon completion of the contract, the owner shall obtain from the construction contractor instructions in the operational use and maintenance of systems and equipment as required.

(5) Heating, ventilating, and air conditioning (HVAC) systems.

(A) All central HVAC systems shall comply with and shall be installed in accordance with the requirements of NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems, 2002 Edition, or NFPA 90B, Standard for the Installation of Warm Air Heating and Air-Conditioning Systems, 2002 Edition, as applicable and the requirements contained in this paragraph. Air handling units serving two or more rooms are considered to be central units.

(B) Noncentral air handling systems, i.e., individual room units that are used for heating and cooling purposes (e.g., fan-coil units, heat pump units, and packaged terminal air conditioning units) shall be equipped with permanent (cleanable) or replaceable filters. The filters shall have an average efficiency of 25 - 30% and an average arrestance of 85% based on American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), Inc., Standard 52.2, 1999 edition, Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size. These units shall be used as air recirculating units only. All outdoor air requirements shall be met by a separate central air handling system with the proper filtration, as required in Table 1 of §135.56(a) of this title.

(C) General ventilation requirements. All rooms and areas in the ASC shall have provision for positive ventilation. Fans serving exhaust systems shall be located at the discharge end and shall

be conveniently accessible for service. Exhaust systems may be combined, unless otherwise noted, for efficient use of recovery devices required for energy conservation. The ventilation rates shown in Table 1 of §135.56(a) of this title shall be used only as minimum requirements, since they do not preclude the use of higher rates that may be appropriate.

(i) Cost reduction methods. To reduce utility costs, facility design may utilize energy conserving procedures including recovery devices, variable air volume, load shedding, systems shutdown, or reduction of ventilation rates (when specifically permitted) in certain areas when unoccupied. In no case shall patient care be jeopardized.

(ii) Economizer cycle. Mechanical systems shall be arranged to take advantage of outside air conditions by using an economizer cycle when appropriate to reduce heating and cooling systems loads. Innovative design that provides for additional energy conservation while meeting the intent of this section for acceptable patient care may be presented to the department for consideration.

(iii) Areas requiring fully ducted systems. Fully ducted supply, return and exhaust air for HVAC systems shall be provided for all critical care areas, sensitive care areas, all patient care areas, all areas requiring a sterile regimen, clean storage rooms, and where required for fire safety purposes. Combination systems, utilizing both ducts and plenums for movement of air in these areas, shall not be permitted. Ductwork access panels shall be labeled.

(iv) Temperatures and humidities. The designed capacity of the systems shall be capable of providing the ranges of temperatures and humidities as shown in Table 1 of §135.56(a) of this title.

(v) Thermometers and humidity gauges. Each operating room, special procedure room, and postoperative recovery suite shall have temperature and humidity indicating devices mounted at eye level.

(vi) Outside air intake locations.

(I) Outside air intakes shall be located at least 25 feet from exhaust outlets of ventilating systems, combustion equipment stacks, medical-surgical vacuum system outlets, plumbing vents, or areas which may collect vehicular exhaust or other noxious fumes. (Prevailing winds and proximity to other structures may require other arrangements).

(II) Plumbing and vacuum vents that terminate five feet above the level of the top of the air intake may be located as close as 10 feet to the air intake.

(III) The bottom of outside air intakes serving central systems shall be located as high as practical but at least six feet above ground level, or if installed above the roof, three feet above the roof level.

(vii) Contaminated air exhaust outlets. Exhaust outlets from areas (laboratory hoods, etc.) that exhaust contaminated air shall be above the roof and be arranged to exhaust upward unless the air has been treated by an appropriate means where sidewall exhaust will be allowed. Exhaust outlets from areas containing ethylene oxide sterilizers and other contaminants, e.g., glutaraldehyde, shall terminate not less than eight feet above the roof level (or be appropriately labeled as "hazardous exhaust") and arranged to exhaust upward.

(viii) Directional air flow. Ventilation systems shall be designed and balanced to provide pressure relationships contained in Table 1 of §135.56(a) of this title. For reductions and shut down of ventilation systems when a room is unoccupied, the provisions in Note 4 of Table 1 of §135.56(a) of this title shall be followed.

(ix) Air distribution devices. Design shall consider turbulence and other factors of air movement to minimize airborne particulate matter. Where extraordinary procedures require special designs, the installation shall be reviewed on a case-by-case basis.

(I) All supply diffusers grilles shall be located on the ceiling or on a wall near the ceiling.

(II) Air supply for the operating rooms and special procedure rooms shall be from ceiling outlets near the center of the work area to efficiently control air movement.

(III) A minimum of two return air inlets located diagonally opposite from one another and near floor level shall be provided. Bottoms of return air grilles in operating rooms and other anes- thetizing locations shall be located not more than 12 inches above the finished floor nor less than six inches above the finished floor.

(x) Ventilation start-up requirements. Air handling systems shall not be started or operated without the filters installed in place. This includes the 90% and 99.97% efficiency filters where required. This includes during construction operations. Ducts shall be cleaned thoroughly and throughout by a National Air Duct Cleaners Association (NADCA) certified air duct cleaning contractor when the air handling systems have been operating without the required filters in place. When ducts are determined to be dirty or dusty, the department shall require a written report assuring cleanliness of duct and clean air quality.

(xi) Humidifier location. When duct humidifiers are located upstream of the final filters, they shall be located at least 15 feet from the filters. Duct work with duct-mounted humidifiers shall be provided with a means of removing water accumulation. An adjustable high-limit humidistat shall be located downstream of the humidifier to reduce the potential of condensation inside the duct. All duct takeoffs shall be sufficiently downstream of the humidifier to ensure complete moisture absorption. Reservoir-type water spray or evaporative pan humidifiers shall not be used.

(xii) Filtration requirements. All air handling units shall be equipped with filters having efficiencies equal to, or greater than, those specified in Table 2 of §135.56(b) of this title. Filter efficiencies shall be average dust spot efficiencies tested in accordance with American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), Inc., Standard 52.2, 1999 edition, Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size. All joints between filter segments, and between filter segments and the enclosing ductwork, shall have gaskets and seals to provide a positive seal against air leakage. Air handlers serving more than one room shall be considered as central air handlers. All documents published by ASHRAE as referenced in this section may be obtained by writing or calling the ASHRAE, Inc. at the following address or telephone number: ASHRAE, 1791 Tullie Circle, North-east, Atlanta, Georgia 30329; telephone (404) 636-8400.

(I) Filtration requirements for air handling units serving single rooms requiring asepsis control. Dedicated air handlers serving only one room where asepsis control is required, such as, but not limited to, operating rooms, special procedure rooms, and treatment rooms shall be equipped with filters having efficiencies equal to, or greater than, those specified for patient care areas in Table 2 of §135.56(b) of this title.

(II) Filtration requirements for air handling units serving other single rooms. Dedicated air handlers serving all other single rooms shall be equipped with nominal filters installed at the return air system.

(III) Location of multiple filters. Where two filter beds are required by Table 2 of §135.56(b) of this title, filter bed number one shall be located upstream of the air conditioning equipment, and filter bed number two shall be downstream of the supply air blowers, cooling and heating coils.

(IV) Location of single filters. Where only one filter bed is required by Table 2 of §135.56(b) of this title, it shall be located upstream of the supply fan. Filter frames shall be durable and constructed to provide an airtight fit with the enclosing ductwork.

(V) Pressure monitoring devices. A manometer or draft gauge shall be installed across each filter bed having a required efficiency of 75% or more, including laboratory hoods requiring high efficiency particulate air (HEPA) filters. The pressure monitoring device shall be mounted below the ceiling line within the ASC such that it can be observed by staff.

(D) Thermal and acoustical insulation for air handling systems. Asbestos containing insulation materials shall not be used.

(i) Thermal duct insulation. Air ducts and casings with outside surface temperature below the ambient dew point or temperature above 80 degrees Fahrenheit shall be provided with thermal insulation.

(ii) Insulation in air plenums and ducts. When installed, linings in air ducts and equipment shall meet the Erosion Test Method described in Underwriters Laboratories (UL), Standard 181, relating to Factory-Made Duct Materials and Air Duct Connectors, April 4, 1996 edition. This document may be obtained from the Underwriters Laboratories, 333 Pfingsten Road, Northbrook, Illinois 60062-2096.

(iii) Insulation flame spread and smoke developed ratings. Interior and exterior insulation, including finishes and adhesives on the exterior surfaces of ducts and equipment, shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less as required by NFPA 90A, Chapters 4 and 5 and as determined by an independent testing laboratory in accordance with NFPA 255, A Standard Method of Test of Surface Burning Characteristics of Building Materials, 2000 Edition.

(iv) Linings and acoustical traps. Duct lining and acoustical traps exposed to air movement shall not be used in ducts serving critical care areas. This requirement shall not apply to mixing boxes and acoustical traps that have approved nonabrasive coverings over such linings.

(v) Frangible insulation. Insulation of soft and spray-on types shall not be used where it is subject to air currents or mechanical erosion or where loose particles may create a maintenance problem or occupant discomfort.

(vi) Existing duct linings. Internal linings shall not be used in ducts, terminal boxes, or other air system components supplying operating rooms and the postoperative recovery suite, unless terminal filters of at least 90% efficiency are installed downstream of linings.

(E) Ventilation for anesthetizing locations. When anesthesia is administered, ventilation for anesthetizing locations, as defined in NFPA 99, §3-3, shall comply with NFPA 99, §13.4.1.2 and any specific ventilation requirements of clauses (i) - (iii) of this subparagraph.

(i) Smoke removal systems for anesthetizing locations. Smoke removal systems shall be provided in all windowless anesthetizing locations in accordance with NFPA 99, §6.4.1.2. Supply and exhaust systems for windowless anesthetizing locations shall be

arranged to automatically exhaust smoke and products of combustion, prevent recirculation of smoke originating within the surgical suite, and prevent the circulation of smoke entering the system intakes, without in either case interfering with the exhaust function of the system.

(ii) Smoke removal systems for surgical suites. Smoke removal systems shall be provided in all surgical suites in accordance with NFPA 99, §6.4.1.3.

(iii) Smoke exhaust grilles. Exhaust grilles for smoke evacuation systems shall be ceiling-mounted or wall-mounted within 12 inches of the ceiling.

(F) Location of return and exhaust air devices. The bottoms of wall-mounted return and exhaust air openings shall be at least four inches above the floor. Return air openings located less than six inches above the floor shall be provided with nominal filters. All exhaust air openings and return air openings located higher than six inches but less than seven feet above the floor shall be protected with grilles or screens having openings through which a one-half inch sphere will not pass.

(G) Ray protection. Ducts which penetrate construction intended for X-ray or other ray protection shall not impair the effectiveness of the protection.

(H) Fire damper requirements. Fire dampers shall be located and installed in all ducts at the point of penetration of a required two-hour or higher fire-rated wall or floor in accordance with the requirements of NFPA 101, §18.5.2.

(I) Smoke damper requirements. Smoke dampers shall be located and installed in accordance with the requirements of NFPA 101, §20.3.7.3, and NFPA 90A, Chapter 5.

(i) Protection of ducts penetrating fire and smoke partitions. Combination fire and smoke leakage limiting dampers (Class II) shall be installed in accordance with manufacturer's instructions for all ducts penetrating one and two-hour rated fire and smoke partitions required by NFPA 101, §20.3.7, Subdivision of Building Space (not required in ASCs meeting the provisions of NFPA 101, §20.3.7.2, Exception Number 1).

(ii) Fail-safe installation. Combination smoke and fire dampers shall close on activation of the fire alarm system by smoke detectors installed and located as required by National Fire Protection Association 72, National Fire Alarm Code, 2002 Edition (NFPA 72), Chapter 8; NFPA 90A, Chapter 6; and NFPA 101, §20.3.5; the fire sprinkler system; and upon loss of power. Smoke dampers shall not close by fan shutdown alone unless it is a part of an engineered smoke removal system.

(iii) Interconnection of air handling fans and smoke dampers. Air handling fans and smoke damper controls may be interconnected so that closing of smoke dampers will not damage the ducts.

(iv) Frangible devices. Use of frangible devices for shutting smoke dampers is not permitted.

(J) Acceptable damper assemblies. Only fire damper and smoke damper assemblies integral with sleeves and listed for the intended purpose shall be acceptable.

(K) Duct access doors. Unobstructed access to duct openings in accordance with NFPA 90A, §4.3, shall be provided in ducts within reach and sight of every fire damper, smoke damper and smoke detector. Each opening shall be protected by an internally insulated door which shall be labeled externally to indicate the fire protection device located within.

(L) Restarting controls. Controls for restarting fans may be installed for convenient fire department use to assist in evacuation of smoke after a fire is controlled, provided that provisions are made to avoid possible damage to the system because of closed dampers. To accomplish this, smoke dampers shall be equipped with remote control devices.

(M) Make-up air. If air supply requirements in Table 2 of §135.56(b) of this title do not provide sufficient air for use by exhaust hoods and safety cabinets, filtered make-up air shall be ducted to maintain the required air flow direction in that room. Make-up systems for hoods shall be arranged to minimize short circuiting of air and to avoid reduction in air velocity at the point of contaminant capture.

(h) Piping systems and plumbing fixture requirements. All piping systems and plumbing fixtures shall be designed and installed in accordance with the requirements of the National Standard Plumbing Code Illustrated published by the National Association of Plumbing-Heating-Cooling Contractors (PHCC), 2003 edition, and this paragraph. The National Standard Plumbing Code may be obtained by writing or calling the PHCC at the following address or telephone number: Plumbing-Heating-Cooling Contractors, Post Office Box 6808, Falls Church, Virginia 22046; telephone (800) 533-7694.

(1) Piping systems.

(A) Water supply piping systems. Water service pipe to point of entrance to the building shall be brass pipe, copper tube (not less than type M when buried directly), copper pipe, cast iron water pipe, galvanized steel pipe, or approved plastic pipe. Domestic water distribution system piping within buildings shall be brass pipe, copper pipe, copper tube, or galvanized steel pipe. Piping systems shall be designed to supply water at sufficient pressure to operate all fixtures and equipment during maximum demand.

(i) Valves. Each water service main, branch main, riser, and branch to a group of fixtures shall be equipped with accessible and readily identifiable shutoff valves. Stop valves shall be provided at each fixture.

(ii) Backflow preventers. Backflow preventers (vacuum breakers) shall be installed on hose bibs, laboratory sinks, janitor sinks, bedpan flushing attachments, and all other fixtures to which hoses or tubing can be attached. Connections to high hazard sources, e.g., X-ray film processors, shall be from a cold water hose bib through a reduced pressure principle type backflow preventer (RPBFP).

(iii) Flushing valves. Flush valves installed on plumbing fixtures shall be of a quiet operating type, equipped with silencers.

(iv) Capacity of water heating equipment. Water heating equipment shall have sufficient capacity to supply water for all clinical needs based on accepted engineering practices using actual number and type of fixtures and for heating, when applicable.

(v) Domestic hot water system. Hot water distribution system serving all patient care areas shall be under constant recirculation to provide continuous hot water at each hot water outlet.

(vi) Water temperature measurements. Water temperatures shall be measured at hot water point of use or at the inlet to processing equipment. Hot water temperature at point of use for patients, staff, and visitors shall be in the range of 105 to 120 degrees Fahrenheit.

(vii) Water storage tanks. Domestic water storage tank(s) shall be fabricated of corrosion-resistant metal or lined with noncorrosive material. When potable water storage tanks (hot and cold) are used, the water shall be used and replenished. Water shall

not be stored in tanks for future use unless the water is tested weekly for contaminants/bacteria.

(viii) Purified water supply system. Purified water distribution system piping shall be task specific and include, but not necessarily be limited to, polypropylene (PP), polyvinylidene fluoride (PVDF) or polyvinyl chloride (PVC) pipe. Final installed purified water system piping assemblies shall be UL approved and fully comply with applicable American Society for Testing and Materials (ASTM) Fire Resistant/Smoke Density requirements. The applicable documents are available from ASTM International, 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, Pennsylvania 19428-2959.

(ix) Dead-end piping. Dead-end piping (risers with no flow, branches with no fixture) shall not be installed. In any renovation work, dead-end piping shall be removed. Empty risers, mains and branches installed for future use are permitted.

(B) Fire sprinkler systems. When provided, fire sprinkler systems shall comply with the requirements of NFPA 101, §9.7, Automatic Sprinklers and Other Extinguishing Equipment, and the requirements of this subparagraph. All fire sprinkler systems shall be designed, installed, and maintained in accordance with the requirements of NFPA 13, Standard for the Installation of Sprinkler Systems, 2002 Edition, and shall be certified as required by §135.55(c)(1)(C) of this title (relating to Construction, Inspections, and Approval of Project).

(C) Piped nonflammable medical gas and clinical vacuum systems. When provided, piped nonflammable medical gas and clinical vacuum system installations shall be designed, installed, and certified in accordance with the requirements of NFPA 99, §5.1 for Level 1 Piped Systems and the requirements of this subparagraph.

(i) Outlets. Nonflammable medical gas and clinical vacuum outlets shall be provided in accordance with Table 3 of §135.56(c) of this title.

(ii) Installer qualifications. All installations of the medical gas piping systems including source tanks and related piping shall be done only by, or under the direct supervision of, a holder of a master plumber license or a journeyman plumber license with a medical gas piping installation endorsement issued by the Texas State Board of Plumbing Examiners.

(iii) Installer tests. Prior to closing of walls, the installer shall perform an initial pressure test, a blowdown test, a secondary pressure test, a cross-connection test, and a purge of the piping system as required by NFPA 99.

(iv) Qualifications for conducting verification tests and inspections. Verification testing shall be performed and inspected by a party, other than the installer, installing contractor, or material vendor. Testing shall be conducted by a medical gas system verifier registered with an acceptable organization by this department and is technically competent and experienced in the field of medical gas and vacuum pipeline testing and meets the requirements of The American Society of Safety Engineers (ASSE) Personnel Standard 6030, Professional Qualifications Standard for Medical Gas Systems. The document published by ASSE Personnel Standard 6030, Professional Qualifications Standard for Medical Gas Systems as referenced in this rule may be obtained by writing or calling The American Society of Safety Engineers (ASSE) at ASSE International Office, 901 Canterbury, Suite A, Westlake, Ohio 44145, telephone (440) 885-3040.

(v) Verification tests. Upon completion of the installer inspections and tests and after closing of walls, verification tests of the medical gas piping systems, the warning system, and the gas supply source shall be conducted. The verification tests shall include



a cross-connection test, valve test, flow test, piping purge test, piping purity test, final tie-in test, operational pressure tests, and medical gas concentration test.

(vi) Verification test requirements. Verification tests of the medical gas piping system and the warning system shall be performed on all new piped medical gas systems, additions, renovations, or repaired portions of an existing system. All systems that are breached and components that are added, renovated, or replaced shall be inspected and appropriately tested. The breached portions of the systems subject to inspection and testing shall be all of the new and existing components in the immediate zone or area located upstream of the point or area of intrusion and downstream to the end of the system or a properly installed isolation valve.

(vii) Warning system verification tests. Verification tests of piped medical gas systems shall include tests of the source alarms and monitoring safeguards, master alarm systems, and the area alarm systems.

(viii) Source equipment verification tests. Source equipment verification tests shall include medical gas supply sources (bulk and manifold) and the compressed air source systems (compressors, dryers, filters, and regulators).

(ix) ASC responsibility. Before new piped medical gas systems, additions, renovations, or repaired portions of an existing system are put into use, ASC medical personnel shall be responsible for ensuring that the gas delivered at the outlet is the gas shown on the outlet label and that the proper connecting fittings are checked against their labels.

(x) Written certification. Upon successful completion of all verification tests, written certification for affected piped medical gas systems and piped medical vacuum systems including the supply sources and warning systems shall be provided by a party technically competent and experienced in the field of medical gas pipeline testing stating that the provisions of NFPA 99 have been adhered to and systems integrity has been achieved. The written certification shall be submitted directly to the ASC and the installer. A copy shall be available at final department construction inspection.

(xi) Documentation of medical gas and clinical vacuum outlets. Documentation of the installed, modified, extended or repaired medical gas piping system shall be submitted to the department by the same party certifying the piped medical gas systems. The number and type of medical gas outlets (e.g., oxygen, vacuum, medical air, nitrogen, nitrous oxide) shall be documented and arranged tabularly by room numbers and room types.

(D) Medical gas storage facilities. Main storage of medical gases may be outside or inside the ASC in accordance with NFPA 99, §5.1. Provision shall be made for additional separate storage of reserve gas cylinders necessary to complete at least one day's procedures.

(E) Multiple gas outlets on one medical gas outlet. Y-connections, "twinning", or other similar devices shall not be used on any medical gas outlet.

(F) Waste anesthetic gas disposal (WAGD) systems. Each space routinely used for administering inhalation anesthesia shall be provided with a WAGD system as required by NFPA 99, §5.1.3.7.

(2) Steam and hot water systems.

(A) Boilers. When provided, the boilers shall have the capacity, based upon the net ratings as published in The I-B-R Ratings Book for Boilers, Baseboard Radiation and Finned Tube (commercial) by the Hydronics Institute Division of GAMA, to supply the normal

heating, hot water, and steam requirements of all systems and equipment. The document published by the Hydronics Institute Division of GAMA as referenced in this rule may be obtained by writing or calling the Hydronics Institute Division of GAMA at 35 Russo Place, Post Office Box 218, Berkeley Heights, New Jersey 07922, telephone (908) 464-8200.

(i) Boiler accessories. Boiler feed pumps, heating circulating pumps, condensate return pumps, and fuel oil pumps shall be connected and installed to provide normal and standby service.

(ii) Valves. Supply and return mains and risers of cooling, heating, and process steam systems shall be valved to isolate the various sections of each system. Each piece of equipment shall be valved at the supply and return ends except that vacuum condensate returns need not be valved at each piece of equipment.

(B) Boiler certification. When required, the ASC shall ensure compliance with Texas Department of Licensing and Regulation, Boiler Section, Texas Boiler Law, (Health and Safety Code, Chapter 755, Boilers), which requires certification documentation for boilers to be posted on site at each boiler installation.

(3) Drainage systems. Building sewers shall discharge into a community sewage system. Where such a system is not available, a facility providing sewage treatment shall conform to applicable local and state regulations.

(A) Above ground piping. Soil stacks and roof drains installed above ground within buildings shall be drain-waste-vent (DWV) weight or heavier and shall be: copper pipe, copper tube, cast iron pipe, or Schedule 40 polyvinyl chloride (PVC) pipe. Buildings or portions of buildings remodeled to an ASC need not comply with this requirement.

(B) Underground piping. All underground building drains shall be cast iron soil pipe, hard temper copper tube (DWV or heavier), acrylonitrile-butadiene-styrene (ABS) plastic pipe (DWV Schedule 40 or heavier), or PVC pipe (DWV Schedule 40 or heavier). Underground piping shall have at least 12 inches of earth cover or comply with local codes. Existing buildings or portions of buildings that are being remodeled need not comply with this subparagraph.

(C) Drains for chemical wastes. Separate drainage systems for chemical wastes (acids and other corrosive materials) shall be provided. Materials acceptable for chemical waste drainage systems shall include chemically resistant borosilicate glass pipe, high silicone content cast iron pipe, polypropylene plastic pipe, or plastic lined pipe.

(D) Drainage and waste piping. Drainage and waste piping shall not be installed above or below ceilings in operating rooms, special procedure rooms, and sterile processing rooms unless precautions are taken to protect the space below from leakage and condensation from necessary overhead piping. Secondary protection shall be required to drain. Any required secondary protection shall be labeled, "code required secondary drain system" every 20 feet in a highly visible print or label.

(4) Thermal insulation for piping systems and equipment. Asbestos containing insulation materials shall not be used.

(A) Insulation. Insulation shall be provided for the following:

(i) boilers, smoke breeching, and stacks;

(ii) steam supply and condensate return piping;

(iii) hot water piping and all hot water heaters, generators, converters, and storage tanks;

(iv) chilled water, refrigerant, other process piping, equipment operating with fluid temperatures below ambient dew point, and water supply and drainage piping on which condensation may occur. Insulation on cold surfaces shall include an exterior vapor barrier; and

(v) other piping, ducts, and equipment as necessary to maintain the efficiency of the system.

(B) Insulation flame spread. Flame spread shall not exceed 25 and smoke development rating shall not exceed 50 for pipe insulation as determined by an independent testing laboratory in accordance with NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials, 2000 Edition.

(5) Plumbing fixtures. Plumbing fixtures shall be made of nonabsorptive, acid-resistant materials and shall comply with the requirements of the National Standard Plumbing Code, and this paragraph.

(A) Sink and lavatory controls. All lavatories used by medical and nursing staff and by patients shall be trimmed with valves or electronic controls which can be operated without the use of hands. Blade handles used for this purpose shall not be less than four inches in length. Single lever or wrist blade devices may also be used.

(B) Clinical sink traps. Clinical sinks shall have an integral trap in which the upper portion of a visible trap seal provides a water surface.

(C) Sinks for disposal of plaster of paris. Sinks that are used for the disposal of plaster of paris shall have a plaster trap.

(D) Back-flow or siphoning. All plumbing fixtures and equipment shall be designed and installed to prevent the back-flow or back-siphonage of any material into the water supply. The over-the-rim type water inlet shall be used wherever possible. Vacuum-breaking devices shall be properly installed when an over-the-rim type water inlet cannot be utilized.

(E) Drinking fountain. Each drinking fountain shall be designed so that the water issues at an angle from the vertical, the end of the water orifice is above the rim of the bowl, and a guard is located over the orifice to protect it from lip contamination.

(F) Sterilizing equipment. All sterilizing equipment shall be designed and installed to prevent not only the contamination of the water supply but also the entrance of contaminating materials into the sterilizing units.

(G) Hose attachment. No hose shall be affixed to any faucet if the end of the hose can become submerged in contaminated liquid unless the faucet is equipped with an approved, properly installed vacuum breaker.

(H) Bedpan washers and sterilizers. When provided, bedpan washers and sterilizers shall be designed and installed so that both hot and cold water inlets shall be protected against back-siphonage at maximum water level.

(I) Flood level rim clearance. The water supply spouts for lavatories and sinks required in patient care areas shall be mounted so that their discharge points are a minimum of five inches above the rim of the fixture.

(J) Scrub sink controls. Freestanding scrub sinks and lavatories used for scrubbing in procedure rooms shall be trimmed with foot, knee, or electronic hands-free controls. Single lever wrist blades are not acceptable at scrub sinks.

(K) Floor drains or floor sinks. Where floor drains or floor sinks are installed, they shall be of a type that can be easily cleaned by removal of the cover. Removable stainless steel mesh shall be provided in addition to a grilled drain cover to prevent entry of large particles of waste which might cause stoppages.

(L) Under counter piping. Under counter piping and above floor drains shall be arranged (raised) so as not to interfere with cleaning of the floor below the equipment.

(M) Ice machines. All ice-making machines used for human consumption shall be of the self-dispensing type. Copper tubing shall be provided for supply connections to ice machines.

(i) General electrical requirements. This paragraph contains common electrical and essential emergency system requirements.

(1) Electrical requirements. All electrical material and equipment, including conductors, controls, and signaling devices, shall be installed in compliance with applicable sections of the NFPA 70, National Electrical Code, 2002 Edition, §517; NFPA 99, Chapter 14; the requirements of this subsection; and as necessary to provide a complete electrical system. Electrical systems and components shall be listed by nationally recognized listing agencies as complying with available standards and shall be installed in accordance with the listings and manufacturer's instructions.

(A) All fixtures, switches, sockets, and other pieces of apparatus shall be maintained in a safe and working condition.

(B) Extension cords and cables shall not be used for permanent wiring.

(C) All electrical heating devices shall be equipped with a pilot light to indicate when the device is in service, unless equipped with a temperature limiting device integral with the heater.

(D) All equipment, fixtures, and appliances shall be properly grounded in accordance with NFPA 70.

(E) Under counter electrical installations shall be arranged (raised) to not interfere with cleaning of the floor below the equipment.

(2) Installation testing and certification.

(A) Installation testing. The electrical installations, including grounding continuity, fire alarm, nurses calling system and communication systems, shall be tested to demonstrate that equipment installation and operation is appropriate and functional. A written record of performance tests on special electrical systems and equipment shall show compliance with applicable codes and standards and shall be available to the department upon request.

(B) Grounding system testing. The grounding system shall be tested as described in NFPA 99, §4.3.3, for patient care areas in new or renovated work. The testing shall be performed by a qualified electrician or their qualified electrical testing agent. The electrical contractor shall provide a letter stating that the grounding system has been tested in accordance with NFPA 99, the testing device use complies with NFPA 99, and whether the grounding system passed the test. The letter shall be signed by the qualified electrical contractor, or their designated qualified electrical testing agent, certifying that the system has been tested and the results of the test are indicated.

(3) Electrical safeguards. Shielded isolation transformers, voltage regulators, filters, surge suppressors, and other safeguards shall be provided as required where power line disturbances are likely to affect fire alarm components, data processing, equipment used for treatment, and automated laboratory diagnostic equipment.

(4) Services and switchboards. Electrical service and switchboards serving the required ASC components shall be installed above the designated 100-year flood plain. Main switchboards shall be located in separate rooms, separated from adjacent areas with one-hour fire-rated enclosures containing only electrical switchgear and distribution panels and shall be accessible to authorized persons only. These rooms shall be ventilated to provide an environment free of corrosive or explosive fumes and gases, or any flammable and combustible materials. Switchboards shall be located convenient for use and readily accessible for maintenance as required by NFPA 70, Article 384. Overload protective devices shall operate properly in ambient temperatures.

(5) Panelboard. Panelboards serving normal lighting and appliance circuits shall be located on the same floor as the circuits they serve. Panelboards serving critical branch emergency circuits shall be located on each floor that has major users (operating rooms, special procedure room, etc.) and may also serve the floor above and the floor below. Panelboards serving life safety branch circuits may serve three floors, the floor where the panelboard is located, and the floors above and below.

(6) Wiring. All conductors for controls, equipment, lighting and power operating at 100 volts or higher shall be installed in metal or metallic raceways in accordance with the requirements of NFPA 70, Article 517. All surface mounted wiring operating at less than 100 volts shall be protected from mechanical injury with metal raceways to a height of seven feet above the floor. Conduits and cables shall be supported in accordance with NFPA 70, Article 300.

(7) Mechanical protection of the emergency system. The wiring of the emergency system shall be mechanically protected by installation in nonflexible metal raceways in accordance with NFPA 70, §517.30(C)(3).

(8) Lighting.

(A) Lighting intensity for staff and patient needs shall comply with guidelines for health care facilities set forth in the Illuminating Engineering Society of North America (IESNA) Handbook, 2000 edition, published by the IESNA, 120 Wall Street, Floor 17, New York, New York 10005.

(i) Consideration shall be given to controlling light intensity and wavelength to prevent harm to the patient's eyes.

(ii) Approaches to buildings and parking lots, and all spaces within buildings shall have fixtures that can be illuminated as necessary. All rooms including storerooms, electrical and mechanical equipment rooms, and all attics shall have sufficient artificial lighting so that all spaces shall be clearly visible.

(iii) Consideration shall be given to the special needs of the elderly. Excessive contrast in lighting levels that makes effective sight adaptation difficult shall be minimized.

(B) Means of egress and exit sign lighting intensity shall comply with NFPA 101, §§7.8, 7.9, and 7.10.

(C) Electric lamps, which may be subject to breakage or which are installed in fixtures in confined locations when near woodwork, paper, clothing, or other combustible materials, shall be protected by wire guards, or plastic shields.

(D) Ceiling mounted surgical and examination light fixtures shall be suspended from rigid support structures mounted above the ceiling.

(E) Operating rooms shall have general lighting in addition to local lighting provided by special lighting units at the surgical

tables. Each fixed special lighting unit at the tables, except for portable units, shall be connected to an independent circuit.

(F) X-ray film illuminators for handling at least two films simultaneously shall be provided in each operating room and special procedure room. When the entire surgical suite is provided with digital imaging system capabilities the film illuminators may be omitted.

(9) Receptacles. Only listed hospital grade single-grounding or duplex-grounding receptacles shall be used in the operating rooms, special procedure rooms, postoperative recovery suite, and all patient care areas. This does not apply to special purpose receptacles.

(A) Installations of multiple-ganged receptacles shall not be permitted in patient care areas.

(B) Electrical outlets powered from the critical branch shall be provided in all patient care, procedure and treatment locations in accordance with NFPA 99, §4.4.2.2.2.3. At least one receptacle at each patient treatment or procedure location shall be powered from the normal power panel. All receptacles powered from the critical branch shall be colored red.

(C) Replacement of malfunctioning receptacles and installation of new receptacles powered from the critical branch in existing facilities shall be accomplished with receptacles of the same distinct color as the existing receptacles.

(D) All critical care area receptacles shall be identified. The face plate for the receptacle(s) shall have a nonremovable label or be engraved indicating the panel and circuit number.

(E) In locations where mobile X-ray or other equipment requiring special electrical configuration is used, the additional receptacles shall be distinctively marked for the special use.

(F) Each receptacle shall be grounded to the reference grounding point by means of a green insulated copper equipment grounding conductor in accordance with NFPA 70, §517-13.

(G) Each operating room and special procedure room shall have at least four duplex receptacles located convenient to the head of the procedure table and one receptacle on the other walls.

(H) Each work table or counter shall have access to one duplex receptacle for every six feet of table or counter space or fraction thereof.

(I) A minimum of one duplex receptacle in each wall shall be installed in each work area or room other than storage or lockers.

(J) Appliances shall be grounded in accordance with NFPA 99, Chapter 9.

(K) Ground fault circuit interrupters (GFCI) receptacles shall be provided for all general use receptacles located within three feet of a wash basin or sink. When GFCI receptacles are used, they shall be connected to not affect other devices connected to the circuit in the event of a trip. Receptacles connected to the critical branch that may be used for equipment that should not be interrupted do not have to be GFCI protected. Receptacles in wet locations, as defined by NFPA 70, §§517.20 and 517.21, shall be GFCI protected regardless of the branch of the electrical system serving the receptacle.

(10) Equipment.

(A) The following shall be powered from the Type I essential electrical system in accordance with the requirements of NFPA 99, §§3-4.2.2.3, when such a system is required for safe operation of the ASC referenced in paragraph (14) of this subsection.

(i) Boiler accessories including feed pumps, heat-circulating pumps, condensate return pumps, fuel oil pumps, and waste heat boilers shall be connected to the equipment system.

(ii) Ventilating system serving preoperative areas, operating rooms, and the postoperative recovery suite shall be connected to the equipment system in accordance with the requirements of NFPA 99, Chapter 3.

(B) Laser equipment shall be installed according to manufacturer recommendations and shall be registered with Department of State Health Services, Radiation Safety Licensing Branch, Post Office Box 149347, Austin, Texas 78714-9347.

(C) A "kill switch" shall be provided for disconnection of each HVAC serving the building in accordance with the requirements of NFPA 90A, §6.2.1.

(11) Wet patient care location. Wet patient care locations shall be protected against shock in accordance with the requirements of NFPA 99, §4.3.2.2.9.1.

(12) Grounding requirements. Fixed electrical equipment shall be grounded in accordance with the requirements of NFPA 99, §4.3.3.1, and NFPA 70, Article 517.

(13) Nurses calling systems.

(A) A nurse emergency calling system shall be installed in all toilets used by patients to summon nursing staff in an emergency. Activation of the system shall sound an audible signal which repeats every five seconds at a staffed location, and shall activate a distinct visible signal outside of toilet room where the call originated. The visible and audible signals shall be cancelable only at the patient calling station. Activation of the system shall also activate distinct visible signals in the clean workroom, in the soiled workroom, and if provided, in the nourishment station.

(B) A staff emergency assistance calling system station shall be located in each operating room, treatment room, examination room, postoperative recovery, and preoperative holding area to be used by staff to summon additional help in an emergency. Activation of the system shall sound an audible signal at a staffed location, indicate type and location of call on the system monitor, and activate a distinct visible signal in the corridor at the door. Additional visible signals shall be installed at corridor intersections in multi-corridor facilities. Distinct visible and audible signals shall be activated in the clean workroom, in soiled workroom, sterile processing room, equipment storage, and if provided, in the nourishment station.

(14) Essential electrical system. The essential electrical system shall comply with the requirements of NFPA 99, §4.4.

(A) A Type 1 essential electrical system shall be installed, maintained and tested in each ASC in accordance with requirements of NFPA 99, §4.4; NFPA 101, §20.2.9; and National Fire Protection Association 110, Standard for Emergency and Standby Power Systems, 2002 Edition.

(i) At least one autoclaving/sterilizing equipment shall be connected to the emergency electrical essential power system.

(ii) One electrical outlet connected to the life safety branch of the electrical system shall be provided adjacent to (or on) the emergency generator.

(iii) The battery charger for emergency lighting at the emergency generator shall be connected to the life safety branch of the electrical system.

(B) Fuel storage capacity for an on-site generator for a Type 1 essential electrical system shall allow continuous operation, under full load for eight hours of testing as required by NFPA 99, §4.4.4.1.1.2.

(C) When a vapor liquefied petroleum gas (LPG - natural gas) system is used, the 24-hour fuel capacity on-site is not required. The vapor withdrawal LPG system shall require a dedicated fuel supply.

(D) When the emergency generator(s) and electrical transformer(s) are located within the same area, they shall be located at least 10 feet apart.

(15) Fire alarm system. A fire alarm system which complies with NFPA 101, §20.3.4, and with NFPA 72, Chapter 6 requirements, shall be provided in each facility. The required fire alarm system components are as follows.

(A) A fire alarm control panel (FACP) shall be installed at a visual location such as the main lobby. A remote fire alarm annunciator listed for fire alarm service and installed at a continuously attended location and capable of indicating both visual and audible alarm, trouble, and supervisory signals in accordance with the requirements of NFPA 72 may be substituted for the FACP.

(B) Manual fire alarm pull stations shall be installed in accordance with NFPA 101, §20.3.4.

(C) Ceiling-mounted smoke detector(s) shall be installed in room containing the FACP when this room is not attended continuously by staff as required by NFPA 72, §4.4.5.

(D) Smoke detectors shall be installed in air ducts in accordance with NFPA 72, §5.14.4.2 and §5.14.5 and NFPA 90A, §6.4.2.

(E) Smoke detectors shall be installed in return air ducts in accordance with requirements of NFPA 72 §5.14.4.2.2 and §5.14.5 and NFPA 90A, §6.4.2.2.

(F) Fire sprinkler system water flow switches shall be installed in accordance with requirements of NFPA 101, §9.6.2; NFPA 13, §6.9; and NFPA 72, §8.5.3.3.3.4.

(G) Sprinkler system valve supervisory switches shall be installed in accordance with the requirements of NFPA 72, §6.8.5.5.

(H) A fire alarm signal notification which complies with NFPA 101, §9.6.3, shall be provided to alert occupants of fire or other emergency.

(I) Audible alarm indicating devices shall be installed in accordance with the requirements of NFPA 101, §20.3.4, and NFPA 72, §7.4.

(J) Visual fire alarm indicating devices which comply in accordance with the requirements of NFPA 72, §7.5, shall be provided.

(K) Devices for transmitting alarm for alerting the local fire brigade or municipal fire department of fire or other emergency shall be provided. The devices shall be listed for the fire alarm service by a nationally recognized laboratory, and be installed in accordance with such listing and the requirements of NFPA 72.

(L) Wiring for fire alarm detection circuits and fire alarm notification circuits shall comply with requirements of NFPA 70, Article 760.

§135.54. *Preparation, Submittal, Review and Approval of Plans, and Retention of Records.*

(a) General.

(1) Ambulatory surgical center (ASC) owners/operators shall not begin construction of a new building, additions to or renovations or conversions of existing buildings until the department approves final construction documents.

(2) Plans and specifications describing the construction of new buildings and additions to or renovations and conversions of existing buildings shall be prepared by registered architects and/or licensed professional engineers and meet the requirements of this subchapter.

(3) The names of spaces used in the functional program narrative, preliminary documents, final construction documents and specifications shall be consistent with the names of the spaces used in this chapter.

(4) The department shall notify the ASC owner/operator of the result of its review of each type of submission discussed in this section.

(5) The ASC owner/operator shall respond to all department requests for additional information, including providing a plan of correction for deficiencies cited by the department.

(6) Once final construction documents are approved, the ASC owner/operator shall request inspections in accordance with §135.55 of this title (relating to Construction, Inspections, and Approval of Project).

(7) When construction is delayed for longer than one year from the plan approval or self-certification approval date, construction documents shall be resubmitted to the department for review and approval. The plans shall be accompanied by a new application for plan review and functional program narrative.

(8) The ASC owner/operator shall provide written notification to the department when a project has been placed on hold, canceled, or abandoned.

(9) The department may close a project file after one year of assigning an application number to a project if the project has been placed on hold.

(b) Submission of projects and assignment of application number.

(1) The ASC owner/operator or representative shall submit the following items to the department in care of the mailing or overnight delivery address that appears on the application for plan review:

(A) a completed and signed application for plan review. The application for plan review may be obtained by calling the department's architectural review group by telephone at (512) 834-6649 or visit the Architectural Review at [www.dshs.state.tx.us/hfp](http://www.dshs.state.tx.us/hfp);

(B) a functional program narrative in accordance with subsection (d) of this section; and

(C) final construction documents in accordance with subsection (f) of this section.

(2) The cost of submitting documents/plans and specifications shall be borne by the sender.

(3) Once the department has determined that the submission required in paragraph (1) of this subsection is complete, the department shall assign an application number to the project that shall be referenced on all documents and correspondence related to the project. Final construction documents shall be reviewed in the chronological order received.

(4) All deficiencies noted in the final plan review shall be satisfactorily resolved before approval of project for construction will be granted.

(5) Construction shall not begin until the ASC owner/operator of the facility receives written notification from the department that the final construction documents have been approved.

(c) Feasibility conference. An ASC owner/operator or representative may request a feasibility conference. A feasibility conference is an informal meeting between a member of the department's architectural review group staff and the ASC owner/operator or representative to determine the feasibility of a project, for consultation and informational purposes, and to facilitate and establish understanding of compliance with the rules and codes.

(1) A feasibility conference is not a substitute for plan review.

(2) An ASC owner/operator or representative may schedule a feasibility conference by calling the department's architectural review group by telephone number (512) 834-6649.

(3) The ASC owner/operator or representative shall provide at the feasibility conference the items in subsection (b)(1)(A) - (C) of this section and a set of preliminary plans or final construction documents.

(4) The ASC owner/operator or representative is responsible for recording conference notes and shall submit the notes to the department.

(d) Functional program narrative. The ASC owner/operator shall submit a functional program narrative to the department with each new project in accordance with subsection (b)(1)(B) of this section. The functional program narrative shall be presented on facility letterhead, signed by ASC administration, include the functional description of each space, and the following:

(1) departmental relationships and other basic information relating to the fulfillment of the facility's objectives;

(2) a description of each function to be performed, approximate space needed for these functions, occupants of the various spaces, projected occupant load, types of equipment required, interrelationship of various functions and spaces, and any special design features;

(3) energy conservation measures, included in building, mechanical, and electrical designs;

(4) a description of the type of asepsis control in diagnostic and treatment areas; and

(5) the type of construction (existing or proposed) as stated in §20.1.6 of National Fire Protection Association 101, Life Safety Code, 2003 Edition (NFPA 101), published by the National Fire Protection Association. All documents published by the NFPA as referenced in this section may be obtained by writing or calling the NFPA at the following address and telephone number: 1 Batterymarch Park, Quincy, Massachusetts 02169-7471, (800) 344-3555.

(e) Preliminary documents. The department may request preliminary documents. If requested by the department, the submission shall consist of the items in subsection (b)(1)(A) - (C) of this section, preliminary plans, and outline specifications. The documents shall contain sufficient information to establish the project scope, description of functions to be performed, project location, required fire safety and exiting requirements, building construction type, compartmentation showing fire and smoke barriers, and the usage of all spaces, areas, and rooms on every floor level.

(f) Final construction documents. Final construction documents and specifications shall be submitted to the department for review and approval prior to start of construction. All final documents and specifications shall be appropriately sealed and signed by the projects's registered architect and professional engineer(s) licensed by the State of Texas.

(1) Submission of final construction documents. The ASC owner/operator shall submit to the department for review and approval the items in subsection (b)(1)(A) - (C) of this section (if not previously submitted with preliminary documents) and one set of final construction documents and specifications covering the construction of new buildings or alterations, additions, conversions, modernizations, or renovations to existing buildings.

(2) Preparation of final construction documents. Construction documents shall be well-prepared so that clear and distinct prints may be obtained, shall be accurately and adequately dimensioned, shall include all necessary explanatory notes, schedules, and legends, and shall be adequate for contract purposes. Compliance with model building codes and this chapter shall be indicated. The type of construction, as classified by National Fire Protection Association 220, Standard on Types of Building Construction, 1999 Edition, shall be provided for existing and new facilities. Final plans shall be drawn to a sufficiently large-scale to clearly illustrate the proposed design but not less than one-eighth inch equals one foot. All spaces shall be identified by usage (using the names of spaces used in this chapter) on all plans (architectural, fire safety, mechanical, electrical, etc.) submitted. Separate drawings shall be prepared for each of the following branches of work.

(A) Architectural plans. Architectural drawings shall include the following:

(i) a map of the area within a 500 foot radius of the facility site shall be provided and any hazardous and undesirable location noted in §135.52(a) of this title (relating to Construction Requirements for a New Ambulatory Surgical Center) shall be identified;

(ii) site plan showing all new topography, newly established levels and grades, existing structures on the site (if any), new buildings and structures, roadways, parking, walks, easement, overhead or underground utilities or service lines, and the extent of the areas to be landscaped. All structures which are to be removed under the construction contract and improvements shall be shown. A general description of the immediate area surrounding the site shall be provided;

(iii) plan of each floor and roof to include fire and smoke separation, means of egress, and identification of all spaces;

(iv) schedules of doors, windows, and finishes;

(v) elevations of each facade;

(vi) sections through building; and

(vii) scaled details as necessary.

(B) Fire safety plans. These drawings shall be provided for all newly constructed buildings, conversions of existing buildings for facilities, additions to existing licensed facilities, and remodeled portions of existing buildings containing licensed facilities. Fire safety plans shall be of a sufficiently large-scale to clearly illustrate the proposed design but not less than one-sixteenth inch equals one foot and shall include the following information:

(i) separate fire safety plans (preferably one floor plan per sheet) shall indicate location of fire protection rated walls and partitions, location and fire resistance rating of each fire damper, and the required means of egress (corridors, stairs, exits, exit passage-ways);

(I) when a new building is to contain a proposed facility, when an existing building is converted to a facility, or when an addition is made to an existing facility building, plans of each floor and roof shall be provided;

(II) when a portion of a building is remodeled or when a new service is added, only the plan of the floor where the remodeling will take place or new service will be introduced, and the plan of the floor of discharge shall be provided;

(ii) designated smoke compartments with floor areas of each compartment, location, and fire resistance rating (one or two hour) of each smoke partition, location, type, and fire resistance rating of each smoke damper;

(iii) location of all required fire alarm devices, including all fire alarm control panels, manual pull stations, audible and visual fire alarm signaling devices, smoke detectors (ceiling and duct-mounted), fire alarm annunciators, fire alarm transmission devices, fire sprinkler flow switches, and control valve supervisory switches on each of the floor plans; and

(iv) areas protected with fire sprinkler systems (pendant, sidewall or upright, normal or quick response, and temperature rating shall be indicated), stand pipe system risers and sizes with valves and inside and outside fire department connections, fire sprinkler risers and sizes, location and type of portable fire extinguishers.

(C) Equipment drawings. Equipment drawings shall include the following:

(i) all equipment necessary for the operation of the facility as planned. The design shall indicate provisions for the installation of large and special items of equipment and for service accessibility;

(ii) fixed equipment (equipment which is permanently affixed to the building or which must be permanently connected to a service distribution system designed and installed during construction for the specific use of the equipment). The term "fixed equipment" includes items such as laundry extractors, walk-in refrigerators, communication systems, and built-in casework (cabinets);

(iii) movable equipment (equipment not described in clause (ii) of this subparagraph as fixed). The term "moveable equipment" includes wheeled equipment, plug-in type monitoring equipment, and relocatable items; and

(iv) equipment which is not included in the construction contract but which requires mechanical or electrical service connections or construction modifications. The equipment described in this clause shall be identified on the drawings to ensure its coordination with the architectural, mechanical, and electrical phases of construction.

(D) Structural drawings. Structural drawings shall include:

(i) plans for foundations, floors, roofs, and all intermediate levels;

(ii) a complete design with sizes, sections, and the relative location of the various members;

(iii) a schedule of beams, girders, and columns;

(iv) dimensioned floor levels, column centers, and offsets;

(v) details of all special connections, assemblies, and expansion joints; and

(vi) special openings and pipe sleeves dimensioned or otherwise noted for easy reference.

(E) Mechanical drawings. Mechanical drawings shall include:

(i) complete ventilation systems (supply, return, exhaust), all fire and smoke partitions, locations of all dampers, registers, and grilles, air volume flow at each device, and identification of all spaces (e.g., corridor, patient room, operating room);

(ii) boilers, chillers, heating and cooling piping systems (steam piping, hot water, chilled water), and associated pumps;

(iii) cold and warm water supply systems, water heaters, storage tanks, circulating pumps, plumbing fixtures, emergency water storage tank(s) (if provided), and special piping systems such as for deionized water;

(iv) nonflammable medical gas piping (oxygen, compressed medical air, vacuum systems, nitrous oxide), emergency shutoff valves, pressure gages, alarm modules, gas outlets;

(v) drain piping systems (waste and soiled piping systems, laboratory drain systems, roof drain systems);

(vi) fire protection piping systems (sprinkler piping systems, fire standpipe systems, water or chemical extinguisher piping system for cooking equipment);

(vii) piping riser diagrams, equipment schedules, control diagrams or narrative description of controls, filters, and location of all duct-mounted smoke detectors; and

(viii) laboratory exhaust and safety cabinets.

(F) Electrical drawings. Electrical drawings shall include:

(i) electrical service entrance with service switches, service feeders to the public service feeders, and characteristics of the light and power current including transformers and their connections;

(ii) location of all normal electrical system and essential electrical system conduits, wiring, receptacles, light fixtures, switches, and equipment which require permanent electrical connections, on plans of each building level:

(I) light fixtures marked distinctly to indicate connection to critical or life safety branch circuits or to normal lighting circuits; and

(II) outlets marked distinctly to indicate connection to critical, life safety, or normal power circuits;

(iii) telephone and communication, fixed computers, terminals, connections, outlets, and equipment;

(iv) nurses calling system showing all stations, signals, and annunciators on the plans;

(v) in addition to electrical plans, single line diagrams prepared for:

(I) complete electrical system consisting of the normal electrical system and the essential electrical system including the on-site generator(s), transfer switch(es), emergency system (life safety branch and critical branch), equipment system, panels, subpanels, transformers, conduit, wire sizes, main switchboard, power panels, light panels, and equipment for additions to existing buildings, proposed new facilities, and remodeled portions of existing facilities. Feeder and conduit sizes shall be shown with schedule of feeder breakers or switches;

(II) complete nurses calling system with all stations, signals, annunciators, etc. with room number noted by each device and indicating the type of system (nurses regular calling system, nurses emergency calling system, or staff emergency assistance calling system);

(III) a single line diagram of the complete fire alarm system showing all control panels, signaling and detection devices and the room number where each device is located; and

(vi) schedules of all panels indicating connection to life safety branch, critical branch, equipment system or normal system, and connected load at each panel.

(3) Construction document changes. Any changes to the final construction documents which affect or change the function, design, or designated use of an area shall be submitted to the department for approval prior to authorization of the modifications.

(g) Special submittals.

(1) Self-certification.

(A) In an effort to shorten the plan review and approval process, the ASC owner/operator or representative may request approval of final construction documents under the self-certification review process.

(i) The owner/operator shall submit the items in subsection (b)(1)(A) - (C) of this section and a completed self-certification form, signed by the ASC owner/operator, architect of record, and engineer(s) of record attesting that the plans and specifications are based upon and comply with the requirements of this chapter.

(ii) By signing and submitting the self-certification form, the ASC owner/operator accepts the following conditions.

(I) The department retains the right to review the final construction documents, conduct inspections of the project, and withdraw its approval.

(II) The ASC owner/operator has a continuing obligation to make any changes the department requires to comply with the licensing rules whether or not physical plant construction or alterations have been completed.

(III) The ASC owner/operator is ultimately responsible for compliance with Health and Safety Code, Chapter 243, Texas Ambulatory Surgical Center Licensing Act, and this chapter.

(B) The department shall review the request for self-certification and notify the ASC owner/operator if the request is approved or denied. If denied, the department shall review the final construction documents in the chronological order in which the documents were received. Construction shall not begin until the final construction documents have been reviewed and approved.

(2) Minor project. If a ASC owner/operator believes that a proposed project is a minor project, the ASC owner/operator shall provide to the department a brief written description of the proposed project and floor plans of the areas of work. The minor project request shall be mailed or faxed.

(A) If it is determined that the proposed project is a minor project, the department shall notify the ASC owner/operator of the approval, and state the number of inspections that shall be required. A minimum of one inspection shall be conducted.

(B) The department shall notify the ASC owner/operator that a proposed project is not approved as a minor project, if the project involves any of the following:

- (i) remodeling or alterations which involve alterations to load bearing members or partitions;
- (ii) a change in functional operation;
- (iii) a change that affects fire safety (e.g., modifications to the fire, smoke, and corridor walls);
- (iv) additional services for which the ASC is not currently licensed; and
- (v) a significant change to the mechanical, electrical, plumbing, fire protection, or piped medical system.

(C) The ASC owner/operator shall submit final construction documents in accordance with subsection (f) of this section if the department determines the project is not a minor project.

(3) Fire sprinkler systems.

(A) When the sole purpose of a project is installation of a sprinkler system, whether a partial or complete system, the ASC owner/operator shall submit to the department for approval the items in subsection (b)(1)(A) - (C) of this section and sprinkler documents.

(B) Fire sprinkler systems shall comply with the requirements of National Fire Protection Association 13, Standard for the Installation of Sprinkler Systems, 2002 Edition (NFPA 13), and shall be designed or reviewed by an engineer who is registered by the Texas Board of Professional Engineers in fire protection specialty or is experienced in hydraulic design and fire sprinkler system installation. A short resume shall be submitted if registration is not in fire protection specialty.

(i) Fire sprinkler working plans, complete hydraulic calculations and water supply information shall be prepared in accordance with NFPA 13, §§14.1, 14.2 and 14.3, for new fire sprinkler systems, alterations of and additions to existing ones.

(ii) One set of fire sprinkler working plans, calculations, and water supply information shall be forwarded to the department together with the professional engineer's (P.E. licensed in the State of Texas) certification letter stating that the sprinkler system design complies with the requirements of NFPA 13. Certification of the fire sprinkler system shall be submitted prior to system installation.

(iii) Upon completion of the fire sprinkler system installation and any required corrections, written certification by the engineer, stating that the fire sprinkler system is installed in accordance with NFPA 13 requirements, shall be submitted prior to or with the written request for the final construction inspection of the project.

(h) Retention of drawings, manuals, and design data.

(1) As built drawings. Upon occupancy of the building or portion thereof, the owner shall retain as part of the ASC's permanent records, a complete set of legible architectural plans of each building level, fire safety plans as described in subsection (f)(2)(B) of this section for each floor reflecting fire safety requirements, and all single line diagrams described in subsection (f)(2)(F)(v) of this section, drawings for fixed equipment, and mechanical and electrical systems, as installed or built.

(2) Manuals. Upon completion of the contract, the owner shall retain as part of the ASC's permanent records a complete set of manufacturers' operating, maintenance, and preventive maintenance instructions; parts lists; and procurement information with numbers and a description for each piece of equipment. Facility staff shall also be provided with instructions on how to properly operate systems and equipment. Required information shall include energy ratings as needed for future conservation calculations.

(3) Design data. The owner shall retain in the ASC's permanent records complete design data for the facility. This shall include structural design loadings; summary of heat loss assumption and calculations; estimated water consumption; medical gas outlet listing; list of applicable codes; and electric power requirements of installed equipment. All such data shall be supplied to facilitate future alterations, additions, and changes, including, but not limited to, energy audits and retrofit for energy conservation.

§135.55. *Construction, Inspections, and Approval of Project.*

(a) Construction.

(1) Major construction. Construction, of other than minor alterations, shall not commence until the final plan review deficiencies have been satisfactorily resolved, the appropriate licensing fee has been paid, and the department has issued a letter granting approval to begin construction. Such authorization does not constitute release from the requirements contained in this chapter. If the construction takes place in or near occupied areas, adequate provision shall be made for the safety and comfort of occupants.

(2) Construction commencement notification. The architect of record or the ambulatory surgical center (ASC) owner/operator shall provide written notification to the department when construction will commence. The department shall be notified in writing of any change in the completion schedules.

(3) Completion. Construction shall be completed in compliance with the construction documents including all addenda or modifications approved for the project.

(b) Construction inspections. All ASCs including those which maintain certification under Title XVIII of the Social Security Act (42 United States Code, §§1395 et seq.), and those which maintain accreditation by a Centers for Medicare and Medicaid Services-approved organization are subject to construction inspections.

(1) Number of construction inspections. A minimum of two construction inspections of the project is generally required for the purpose of verifying compliance with subchapters B and C of this chapter and the approved plans and specifications. The final plan approval letter or the self-certification approval letter shall inform the architect of record and the owner as to the minimum number of inspections required for the project.

(2) Requesting an inspection. The architect of record or the ASC owner/operator shall request an inspection by submitting, at least three weeks in advance of the requested inspection date, an application for inspection for each intermediate inspection, final inspection, and reinspection requested. Inspection requests by contractors shall not be honored.

(A) The architect of record or the ASC owner/operator shall request an intermediate construction inspection to occur at approximately 80% completion. All major work above the ceiling shall be completed at the time of the intermediate inspection; however, ceilings shall not be installed.

(B) The architect of record or the ASC owner/operator shall request a final construction inspection at 100% completion. One hundred percent completion means that the project is completed to the extent that all equipment is operating in accordance with specifications, all necessary furnishings are in place, and patients could be admitted and treated in all areas of the project.

(3) Reinspections. Depending upon the number and nature of the deficiencies cited during the final inspection, the inspector may require that a reinspection be conducted to confirm correction of all deficiencies cited. The inspector may also require a reinspection, if



he determines that the project was not sufficiently complete to warrant a final inspection. The request for reinspection shall be submitted in accordance with paragraph (2) of this subsection.

(c) Approval of project. Patients and staff shall not occupy a new structure or remodeled or renovated space until approval has been received from the local building and fire authorities and the department.

(1) Documentation requirements. The ASC owner/operator shall submit the following documents to the department before the project will be approved:

(A) written approval of the project by the fire authority;

(B) a certificate of occupancy for the project issued by the local building authority;

(C) a copy of a letter or certification from a professional engineer (P.E.) licensed in the State of Texas indicating the fire sprinkler working plans, hydraulic calculation, the testing, and field inspection of the installation of the new or modified sprinkler system is in compliance with the requirements of NFPA 13, Standard for the Installation of Sprinkler Systems, 2002 Edition, if applicable. A copy of a letter or certification of changes in existing fire sprinkler system is not required, when relocation of not more than twenty sprinkler heads and hydraulic calculation is involved;

(D) fire alarm system certification (form FML-009A of the State Fire Marshal's Office), if applicable;

(E) a signed copy of a letter of certification from a qualified certification agency or individual for the piped-in medical gas system that was installed or modified and verification inspection testing in this project in accordance with §135.52(h)(1)(C)(iv), (x) and (xi) of this title (relating to Construction Requirements for a New Ambulatory Surgical Center), if applicable;

(F) a copy of the test and a letter from the electrical contractor certifying that the electrical system was tested and complies with the standards of NFPA 99, Health Care Facilities, 2002 Edition, §4.3.2.2.8 (Special Grounding) and §4.3.3.1 (Grounding System Testing), if applicable to the project;

(G) a copy of documentation indicating the flame spread rating and the smoke development rating of any wall covering installed in this project. A signed letter or statement corroborating the installation of the product in the project shall be provided;

(H) a copy of documentation indicating that draperies, curtains (including cubicle curtains), and other similar loosely hanging furnishings and decorations are flame-resistant as demonstrated by passing both the small and large-scale tests of NFPA 701, Standard Methods of Fire Tests for Flame-Resistant Textiles and Films, 1999 Edition, as required by NFPA 101, §18-7.5, and a signed letter or statement corroborating the installation of the product in the project;

(I) a written plan of correction signed by the ASC owner/operator for any deficiencies noted during the final inspection; and

(J) any other documentation or information required or requested due to the type of the project.

(2) Temporary occupancy approval

(A) If, during the final inspection, the inspector finds only a few minor deficiencies that do not jeopardize patient health, safety and welfare, the inspector may grant temporary approval for occupancy by staff only contingent upon the documents listed in paragraph (1)(A) - (E) of this subsection being provided to and approved by the inspector at the time of the final inspection. The inspector shall

issue a completed signed final architectural inspection form as testament for temporary approval for occupancy by staff only. The ASC shall complete the licensing process and receive a license before patients may be admitted or treated.

(B) Temporary approval for occupancy allows the ASC owner/operator to occupy the project. However, the ASC owner/operator shall submit the documents required in paragraph (1)(F) - (J) of this subsection before the project receives final approval.

(3) Final approval. Upon its receipt and acceptance of the documents required in paragraph (1) of this subsection, the department shall issue written final approval of the project.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902091

Lisa Hernandez

General Counsel

Department of State Health Services

Effective date: June 18, 2009

Proposal publication date: December 5, 2008

For further information, please call: (512) 458-7111 x6972



## TITLE 37. PUBLIC SAFETY AND CORRECTIONS

### PART 1. TEXAS DEPARTMENT OF PUBLIC SAFETY

#### CHAPTER 14. SCHOOL BUS SAFETY STANDARDS

##### SUBCHAPTER B. SCHOOL BUS DRIVER ELIGIBILITY AND APPLICATION PROCEDURES

###### 37 TAC §14.14

The Texas Department of Public Safety adopts the repeal of Chapter 14, Subchapter B, §14.14, concerning School Bus Driver Eligibility and Application Procedures, without changes to the proposed text as published in the December 5, 2008, issue of the *Texas Register* (33 TexReg 9940).

Adoption of repeal of the section is necessary in order to delete obsolete language and because the text of the section no longer reflects current statute and practices. Adoption of the repeal is filed simultaneously with the adoption of a new Subchapter B, §14.14, which sets forth minimum driving record requirements for drivers of school buses, school activity buses, and multifunction school activity buses.

No comments were received regarding adoption of the repeal.

The repeal is adopted pursuant to Texas Government Code, §411.004(3), which authorizes the Public Safety Commission to adopt rules considered necessary for carrying out the department's work; Texas Transportation Code, §521.005 that authorizes the Department to adopt rules necessary to administer this chapter; and Texas Transportation Code, §521.022, which au-

thorizes the department to adopt rules to administer restrictions on operators of certain school buses.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902075

Lamar Beckworth

Director

Texas Department of Public Safety

Effective date: June 18, 2009

Proposal publication date: December 5, 2008

For further information, please call: (512) 424-2135



### 37 TAC §14.14

The Texas Department of Public Safety adopts new Chapter 14, Subchapter B, §14.14, concerning Minimum Driving Record Qualifications, without changes to the proposed text as published in the March 13, 2009, issue of the *Texas Register* (34 TexReg 1789).

Adoption of the new section is necessary in order to set forth minimum driving record requirements for drivers of school buses, school activity buses, and multifunction school activity buses.

No comments were received regarding adoption of the new section.

The new section is adopted pursuant to Texas Government Code, §411.004(3), which authorizes the Public Safety Commission to adopt rules considered necessary for carrying out the department's work; Texas Transportation Code, §521.005 which authorizes the Department to adopt rules necessary to administer this chapter; and Texas Transportation Code, §521.022, which authorizes the department to adopt rules to administer restrictions on operators of certain school buses.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902076

Lamar Beckworth

Director

Texas Department of Public Safety

Effective date: June 18, 2009

Proposal publication date: March 13, 2009

For further information, please call: (512) 424-2135



## TITLE 40. SOCIAL SERVICES AND ASSISTANCE

### PART 12. TEXAS BOARD OF OCCUPATIONAL THERAPY EXAMINERS

#### CHAPTER 362. DEFINITIONS

#### 40 TAC §362.1

The Texas Board of Occupational Therapy Examiners (Board) adopts an amendment to §362.1, concerning Definitions, without changes to the proposed text as published in the March 20, 2009, issue of the *Texas Register* (34 TexReg 1969) and will not be republished. The section continues with the replacement of OT or Occupational Therapist in place of Licensed Occupational Therapist, to follow the language written in the OT Practice Act.

The amendment adds language to 40 TAC §362.1 to clarify the terms OT and OTA.

One comment was received regarding adoption of the amendment. The Board considered the comment from J. Polichino and the Board expects temporary licensees to use OT and OTA.

The amendment is adopted under the Occupational Therapy Act (Act), Title 3, Subtitle H, Chapter 454, Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority of adopt rules consistent with this Act to carry out the duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902081

John Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Effective date: June 18, 2009

Proposal publication date: March 20, 2009

For further information, please call: (512) 305-6900



## CHAPTER 364. REQUIREMENTS FOR LICENSURE

#### 40 TAC §364.4

The Texas Board of Occupational Therapy Examiners (Board) adopts an amendment to §364.4, concerning Licensure by Endorsement, without changes to the proposed text as published in the March 20, 2009, issue of the *Texas Register* (34 TexReg 1970) and will not be republished.

The amendment adds language to 40 TAC §364.4, to add a requirement for all applicants to have their current and formerly held or expired state licenses verified to the Board.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Occupational Therapy Act (Act), Title 3, Subtitle H, Chapter 454, Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority of adopt rules consistent with this Act to carry out the duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902082

John Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Effective date: June 18, 2009

Proposal publication date: March 20, 2009

For further information, please call: (512) 305-6900



## CHAPTER 367. CONTINUING EDUCATION

### 40 TAC §367.2

The Texas Board of Occupational Therapy Examiners (Board or TBOTE) adopts an amendment to §367.2, concerning Categories of Continuing Education, without changes to the proposed text as published in the March 20, 2009, issue of the *Texas Register* (34 TexReg 1971) and will not be republished.

The amendment adds language to 40 TAC §367.2, to add a new category for continuing education providing CE hours for student fieldwork supervision, which will recognize the mentoring and education fieldwork 1 and 2 students.

Sixteen comments were received regarding adoption of the amendment. All were in favor of the amendment except one from Ms. Tully, who was against. The Board discussed Ms. Tully's recommendation that the Board establish a certification for fieldwork supervision, but objected on the basis that they want to encourage a board base of participation; that they have no authority to establish a certification; and that fieldwork supervision in and of itself should be a learning experience.

The amendment is adopted under the Occupational Therapy Act (Act), Title 3, Subtitle H, Chapter 454, Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority of adopt rules consistent with this Act to carry out the duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902083

John Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Effective date: June 18, 2009

Proposal publication date: March 20, 2009

For further information, please call: (512) 305-6900



## CHAPTER 370. LICENSE RENEWAL

### 40 TAC §370.2

The Texas Board of Occupational Therapy Examiners (Board) adopts an amendment to §370.2, concerning Late Renewal, without changes to the proposed text as published in the March 20, 2009, issue of the *Texas Register* (34 TexReg 1971) and will not be republished.

The amendment adds language to 40 TAC §370.2, to add a new requirement that former licensees restoring their Texas license must have their current and expired state licenses held since licensure in Texas verified to the Board.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Occupational Therapy Act (Act), Title 3, Subtitle H, Chapter 454, Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority of adopt rules consistent with this Act to carry out the duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902084

John Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Effective date: June 18, 2009

Proposal publication date: March 20, 2009

For further information, please call: (512) 305-6900



## CHAPTER 373. SUPERVISION

### 40 TAC §373.3

The Texas Board of Occupational Therapy Examiners (Board) adopts an amendment to §373.3, concerning Supervision of a Licensed Occupational Therapy Assistant, with changes to the proposed text as published in the March 20, 2009, issue of the *Texas Register* (34 TexReg 1972).

The amendment adds language to 40 TAC §373.3, to add clarification to the supervision requirements.

Two comments were received regarding adoption of the amendment. The Board considered the comments and decided the amendment adds more responsibility for all OTs to participate in the supervision and for them to use the 6 hours per month of communication time to make clear who is the OT supervising OT.

The amendment is adopted under the Occupational Therapy Act (Act) Title 3, Subtitle H, Chapter 454, Occupations Code, which provides the Texas Board of Occupational Therapy Examiners with the authority of adopt rules consistent with this Act to carry out the duties in administering this Act.

Title 3, Subtitle H, Chapter 454 of the Occupations Code is affected by this amended section.

§373.3. *Supervision of a Licensed Occupational Therapy Assistant.*

(a) An occupational therapy assistant shall provide occupational therapy services only under the supervision of an occupational therapist(s).

(b) Supervision of a full time employed occupational therapy assistant by the occupational therapist(s) includes:

(1) A minimum of six hours a month of frequent communication between the supervising occupational therapist(s) and the occupational therapy assistant(s) by telephone, written report, email, conference etc., including review of progress of patient's/client's assigned, plus

(2) A minimum of two hours of supervision a month of face-to-face, real time interaction with the occupational therapist(s) observing the occupational therapy assistant providing services with patients/clients.

(3) These hours shall be documented on a Supervision Log for each employer. The occupational therapist(s) or employer may request a copy of the Supervision Log. The Supervision Log is kept by the occupational therapy assistant and signed by occupational therapist(s) when supervision is given.

(4) All the occupational therapist(s), whether working full time, PRN or part-time, who delegate to the occupational therapy assistant, must be participating in the supervision time, whether on a rotational or shared basis.

(c) Occupational therapy assistants working part-time or less than a full month within a given month may pro-rate these hours, but shall document no less than four hours of supervision per month, one hour of which includes face-to-face, real time interaction by the occupational therapist(s) observing the occupational therapy assistant providing services with patients/clients.

(d) Those months where the occupational therapy assistant licensee does not work as an occupational therapy assistant, he or she shall write N/A in the Supervision Log for that month.

(e) Occupational therapy assistants with more than one employer must have a supervisor at each job whose name is on file with the board and must receive supervision by an occupational therapist(s), as outlined for part-time employment in this section. Occupational therapy assistants who work for more than one employer must submit the name and license number at least one OT at each employer, though any of the occupational therapist(s) at the employer may supervise.

(f) The occupational therapy assistant must include the name of the supervising OT in each patient's treatment note. This may not necessarily be the occupational therapist who wrote the Plan of Care, but an occupational therapist who is readily available to answer questions about the treatment or patient.

This agency hereby certifies that the adoption has been reviewed by legal counsel and found to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on May 29, 2009.

TRD-200902085

John Maline

Executive Director, Executive Council of Physical Therapy and Occupational Therapy Examiners

Texas Board of Occupational Therapy Examiners

Effective date: June 18, 2009

Proposal publication date: March 20, 2009

For further information, please call: (512) 305-6900



# REVIEW OF AGENCY RULES

This section contains notices of state agency rules review as directed by the Texas Government Code, §2001.039. Included here are (1) notices of *plan to review*; (2)

notices of *intention to review*, which invite public comment to specified rules; and (3) notices of *readoption*, which summarize public comment to specified rules. The complete text of an agency's *plan to review* is available after it is filed with the Secretary of State on the Secretary of State's web site (<http://www.sos.state.tx.us/texreg>). The complete text of an agency's rule being reviewed and considered for *readoption* is available in the *Texas Administrative Code* on the web site (<http://www.sos.state.tx.us/tac>).

For questions about the content and subject matter of rules, please contact the state agency that is reviewing the rules. Questions about the web site and printed copies of these notices may be directed to the *Texas Register* office.

## Proposed Rule Reviews

Employees Retirement System of Texas

### Title 34, Part 4

The Employees Retirement System of Texas will review and consider whether to re-adopt, re-adopt with amendments, or repeal 34 Texas Administrative Code, Chapter 74, relating to qualified domestic relations orders. This review is done pursuant to Texas Government Code §2001.039.

The Board will assess whether the reason(s) for adopting or re-adopting this chapter continues to exist. Each section of the chapter will be reviewed to determine whether it is obsolete, reflects current legal and policy considerations, reflects current general provisions in the governance of the Board, and/or whether it is in compliance with Chapter 2001 of the Texas Government Code (Administrative Procedures Act).

Comments on the review may be submitted in writing within 30 days following the publication of this rule review in the *Texas Register* to Paula A. Jones, General Counsel and Chief Compliance Officer, Employees Retirement System of Texas, P.O. Box 13207, Austin, Texas 78711-3207 or you may email Ms. Jones at [paula.jones@ers.state.tx.us](mailto:paula.jones@ers.state.tx.us). The deadline for receiving comments is Sunday, July 12, 2009. Any proposed changes to the sections of this chapter as a result of the review will be published in the Proposed Rules Section of the *Texas Register* and will be open for an additional 30 day public comment period prior to final adoption of any repeal, amendment, or re-adoption.

TRD-200902069

Paula A. Jones  
General Counsel and Chief Compliance Officer  
Employees Retirement System of Texas  
Filed: May 29, 2009



The Employees Retirement System of Texas will review and consider whether to re-adopt, re-adopt with amendments, or repeal 34 Texas Administrative Code, Chapter 81, relating to insurance. This review is done pursuant to Texas Government Code §2001.039.

The Board will assess whether the reason(s) for adopting or re-adopting this chapter continues to exist. Each section of the chapter will be reviewed to determine whether it is obsolete, reflects current legal and policy considerations, reflects current general provisions in the governance of the Board, and/or whether it is in compliance with Chapter 2001 of the Texas Government Code (Administrative Procedures Act).

Comments on the review may be submitted in writing within 30 days following the publication of this rule review in the *Texas Register* to Paula A. Jones, General Counsel and Chief Compliance Officer, Employees Retirement System of Texas, P.O. Box 13207, Austin, Texas 78711-3207 or you may email Ms. Jones at [paula.jones@ers.state.tx.us](mailto:paula.jones@ers.state.tx.us). The deadline for receiving comments is Sunday, July 12, 2009. Any proposed changes to the sections of this chapter as a result of the review will be published in the Proposed Rules Section of the *Texas Register* and will be open for an additional 30 day public comment period prior to final adoption of any repeal, amendment, or re-adoption.

TRD-200902070

Paula A. Jones  
General Counsel and Chief Compliance Officer  
Employees Retirement System of Texas  
Filed: May 29, 2009



Texas Medical Board

### Title 22, Part 9

The Texas Medical Board (Board) proposes to review Chapter 185, relating to Physician Assistants, §§185.1 - 185.26, pursuant to the Texas Government Code, §2001.039.

Elsewhere in this issue of the *Texas Register*, the Board contemporaneously proposes amendments to §§185.4, 185.6, 185.13, 185.16, 185.19, 185.23, and 185.26.

The agency's reason for adopting the rules contained in this chapter continues to exist.

Comments on the proposed review may be submitted to Sally Durocher, P.O. Box 2018, Austin, Texas 78768-2018, or e-mail comments to: [rules.development@tmb.state.tx.us](mailto:rules.development@tmb.state.tx.us).

TRD-200902079

Mari Robinson, J.D.  
Interim Executive Director  
Texas Medical Board  
Filed: May 29, 2009



# 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: 22 TAC §185.23(d)(9)

TEXAS PHYSICIAN ASSISTANT BOARD  
P.O. Box 2018, MC-263  
Austin, Texas 78768-2018

PROFESSIONAL LIABILITY CLAIMS REPORT

FILE ONE REPORT FOR EACH DEFENDANT PHYSICIAN ASSISTANT

**PART I** COMPLETE FOR ALL CLAIMS OR COMPLAINTS AND FILE WITH THE TEXAS PHYSICIAN ASSISTANT BOARD WITHIN 30 DAYS FROM RECEIPT OF COMPLAINT OR CLAIM. INCLUDE COPY OF CLAIM LETTER AND/OR PLAINTIFF'S COMPLAINT.

1. Name and address of insurer:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Defendant physician assistant:

License number: \_\_\_\_\_

3. Plaintiff's name:

\_\_\_\_\_

4. Policy number:

\_\_\_\_\_

5. Date claim reported to insurer/self-insured physician assistant:

\_\_\_\_\_

6. Type of complaint: \_\_\_\_\_ claim only \_\_\_\_\_ lawsuit

7. Initial reserve amount after investigation:

\_\_\_\_\_

(If this is not determined within 30 days, report this data within 105 days of filing the Part I report with the board)

\_\_\_\_\_  
Person completing this report (SIGNATURE)

\_\_\_\_\_  
Person completing this report (PRINT NAME)

\_\_\_\_\_  
Phone number

**PART II COMPLETE AFTER DISPOSITION OF THE CLAIM AS DEFINED IN 22 TAC §185.23, INCLUDING DISMISSALS OR SETTLEMENTS. FILE WITH THE TEXAS PHYSICIAN ASSISTANT BOARD WITHIN 105 DAYS AFTER DISPOSITION OF THE CLAIM. A COPY OF A COURT ORDER OR SETTLEMENT AGREEMENT MAY BE USED AS PROVIDED IN 22 TAC §185.23.**

8. Date of disposition: \_\_\_\_\_

9. Type of Disposition:

\_\_\_\_\_ (1) Settlement

\_\_\_\_\_ (2) Judgment after trial

\_\_\_\_\_ (3) Other (please specify)

\_\_\_\_\_

10. Amount of indemnity agreed upon or ordered on behalf of this defendant:

\$ \_\_\_\_\_.

Note: If percentage of fault was not determined by the court or insurer in the case of multiple defendants, the insurer may report the total amount paid for the claim followed by a slash and the number of insured defendants. (Example: \$100,000/3)

11. Appeal, if known: \_\_\_\_\_ Yes \_\_\_\_\_ No. If yes, which party:

\_\_\_\_\_

\_\_\_\_\_  
Person completing this report (SIGNATURE)

\_\_\_\_\_  
Person completing this report (PRINT NAME)

\_\_\_\_\_  
Phone number



# 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.

## Texas Department of Agriculture

Notice of Request for Proposals: Broadband Mapping Project

**Deadline for proposal submission: 5:00 p.m., Central Daylight Time, Friday, June 19, 2009.**

The Texas Department of Agriculture (TDA), in coordination with the Public Utility Commission of Texas (PUC), is issuing a Request for Proposals for entities to apply for a grant from the United States Department of Commerce (Commerce) to implement the programs and policy initiatives set forth in Public Law 110-385, the Broadband Data Improvement Act of 2008, 47 U.S.C. §1304 (BDIA), and the American Recovery and Reinvestment Act of 2009 (ARRA). TDA and PUC will pre-approve the grant application before submission to Commerce and perform strict monitoring to ensure that funds are utilized to meet TDA objectives and as required by BDIA and ARRA.

TDA, in coordination with PUC, will designate an entity to apply for BDIA and ARRA grant funds. To qualify as eligible entity, the respondent must be a nonprofit organization that is described in §501(c)(3) of the Internal Revenue Code of 1986 and that is exempt from taxation under §501(a) of such Code. Eligible proposers must demonstrate their ability to create a broadband map of the State of Texas, including the identification of unserved and underserved areas. At a minimum, the map must identify all broadband providers in the State of Texas; identify areas unserved by any broadband provider; identify areas served by a single broadband provider; identify areas served by multiple broadband providers; provide the location of towers or other infrastructure used to transmit and receive broadband signals; provide actual upstream and downstream transmission speeds at the census tract level of detail; describe the types of technology, specified by location on the map, used to provide broadband services, including, but not limited to, cable modem, DSL, ADSL, VDSL, fiber optics, wireless, and satellite; ensure the broadband map will be able to provide data on a real time basis; and ensure the broadband map is capable of being integrated with other sources of demographic data. Proposers must demonstrate that their experience is consistent with the size and complexity of the scope of work described in the RFP.

Closing date: Proposals are due no later than June 19, 2009. Proposal responses, modifications or addenda to an original response received by TDA after the specified time and date for closing will not be considered. Each firm is responsible for ensuring that its response reaches TDA before the proposal due date and time. Respondents should submit one unbound original and three copies of their proposal to: Rick Rhodes, Assistant Commissioner for Rural Economic Development, Texas Department of Agriculture, P.O. Box 12847, Austin, Texas 78711; Street Address: 1700 N. Congress, Stephen F. Austin Bldg., 11th Floor, Austin, Texas 78701. Proposals must also meet other submission requirements specified in the RFP.

Evaluation Criteria: Proposals will be evaluated based on the evaluation criteria outlined in the RFP.

TDA reserves the right to accept or reject any proposals submitted. TDA is not obligated to award or execute any contract on the basis of this notice or the distribution of any RFP. TDA shall not pay for any costs incurred by an entity in responding to this notice or the RFP.

The complete RFP is posted on the TDA website at: <http://www.TexasAgriculture.gov>. and on the PUC website at <http://www.puc.state.tx.us/about/procurement/currentrfps.cfm>. To obtain a copy of the RFP, contact Rick Rhodes at (512) 463-7577; [Rick.Rhodes@TexasAgriculture.gov](mailto:Rick.Rhodes@TexasAgriculture.gov); or Texas Department of Agriculture, Rural Economic Development Division, P.O. Box 12847, Austin, TX 78711.

TRD-200902215

Dolores Alvarado Hibbs

General Counsel

Texas Department of Agriculture

Filed: June 3, 2009



Request for Qualifications: Bond and Program Counsel

### 1. Purpose.

The Texas Agricultural Finance Authority (the Authority), a public authority within the Texas Department of Agriculture (the Department), is seeking proposals in response to this Request for Qualifications (RFQ) for bond and program counsel. The Authority is seeking to employ Bond and Program Counsel to assist the Authority in the management of bond obligations in existence as of the date of this RFQ and to provide general program assistance when needed under Chapter 44, Chapter 58, and Chapter 59 of the Texas Agriculture Code (the Code).

### 2. Background of the Authority.

The Authority was created by the Texas Legislature for the purpose of financing innovative, diversified, or value-added production, processing, marketing, or export businesses in Texas. The Authority can provide financing through instruments including direct loans, loan guarantees, insurance or co-insurance. As a result of the Authority's 2008 Strategic Plan, and statutory changes enacted by the 81st legislature of the State of Texas, the Authority anticipates restructuring its financial assistance programs into four categories: an agricultural loan guarantee program, an interest rate reduction program, a young farmer interest rate reduction program, and a young farmer grant program. The Board of Directors (the Board) for the Authority has indicated that it will no longer utilize debt issuance as a program funding tool. However, the Authority must continue to service and manage bond obligations in existence as of the date of this RFQ. Chapter 58 and Chapter 59 of the Code contain statutory provisions relating to the Authority's power to issue revenue bonds and general obligation bonds. The Authority is governed by the Board. Employees of the Department are designated by the Commissioner of Agriculture to administer the Authority.

### 3. Statement of Duties.

#### Statement of Duties for the Bond Counsel.

The counsel's responsibilities for bond work will include, but will not be limited to, advice to the Board and staff of the department (Staff) on: the legal ramifications and constraints of the issuance and investment policy; the legality of loan policy proposals and legal aspects of investments and loan policy; the legality of proposed debt structuring techniques; compliance with federal tax and securities requirements for

financings associated with the Authority's programs; and, real and anticipated changes in state and federal law, regulations, or public policy, and the potential and real impact on existing bond issues, investment policy, and loan policy.

With respect to current bond issues, bond counsel, in consultation with the Authority's Financial Advisor and Staff, may be asked to prepare or review legal documents required by the Board, Comptroller of Public Accounts, Attorney General, or outside parties; request and obtain approvals from the Attorney General, Governor, Bond Review Board and other required authorities; and review financial models and render opinions on the legality and relevant tax position of bond issues.

#### **Statement of Duties for the Program Counsel.**

The counsel shall also perform such other legal services, if requested by the Authority, may request, that do not come within the functions of bond counsel for a particular bond issue, but are needed for the implementation and administration of the programs of the Authority. Such services shall include, without limitation, the following: consultation concerning planning and development of programs of the Authority; providing advice concerning policies for lending or granting funds to eligible borrowers; review of program applications; review and drafting of loan documents; assistance in implementing loan guarantee programs; advice and services concerning legislation affecting such programs; advising on, and upon request of the Authority, initiating and pursuing collection actions in relation to loan programs; and providing advice concerning administration of the Authority.

#### **4. Proposal Contents.**

Responses to this RFQ should include, at least, the following: a thorough description of your firm's ability to represent the Authority in the stated job duties; a description of your firm's past experience as counsel for other state agencies; a description of your firm's past experience as counsel to state and federal banks, credit unions, finance companies, and other financial institutions; a designation of the individuals who might be assigned to the work of the Authority; examples of similar programs in which your firm has assisted as legal counsel; a quotation of your proposed fee structure; a statement addressing the effort made by your firm to encourage and develop the participation of women and minorities in your firm; affirmation that the firm does not, and shall not during the term of the contract, represent any plaintiff in a proceeding seeking monetary damages from the State of Texas or any of its agencies; and a statement of willingness to comply with policies, directives, and guidelines of the Authority and the Attorney General of the State of Texas.

#### **5. Statement of Evaluation Process.**

Responses to this RFQ will be evaluated and ranked according to the information provided, and summarized for the Board's review. Staff will rank the proposals to make a recommendation to the Board at the first available meeting. The Board intends to select the proposal that demonstrates the highest degree of competency and the necessary qualifications and experience in providing the requested legal services at a fair and reasonable price. The Authority reserves the right to contract with separate bond and program counsel, and to contract with more than one bond or program counsel. The Authority reserves the right to issue more than one contract for this RFQ. The Authority reserves the right to contract with separate bond and program counsel, and to contract with more than one bond or program counsel.

#### **6. Proposal Requirements.**

A duly authorized representative of the firm must execute the submitted response. An unsigned response will not be accepted. Issuance of this RFQ in no way constitutes a commitment by the Authority to award a

contract, to issue bonds, or to pay for any services incurred either in the preparation of a response to this RFQ or for the production of any contract for services. The Authority also reserves the right to make amendments to the qualifications requested by giving written notice to all firms who receive this RFQ. All communications with the Authority concerning this RFQ and the selection of Bond Counsel or Program Counsel shall be directed to Rick Rhodes, Assistant Commissioner for Rural Economic Development, with the department, acting as program manager on behalf of the Authority. Any contact by a submitting firm, its employees or representatives with any Board member of the Authority for the purposes of soliciting or encouraging a favorable review may be considered grounds for disqualification.

#### **7. Proposal Submission.**

All proposals must be received no later than 5:00 p.m., August 1, 2009. Proposal responses, modifications or addenda to an original response received by the Authority after the specified time and date for closing will not be considered. Each firm is responsible for ensuring that its response reaches the Authority before the proposed due date. Firms should submit one unbound original and three (3) copies of their proposal to: Mr. Rick Rhodes, Assistant Commissioner for Rural Economic Development, Texas Agricultural Finance Authority, c/o Texas Department of Agriculture, P.O. Box 12847, Austin, Texas 78711, Street Address: 1700 N. Congress Avenue, Stephen F. Austin Building, 11th Floor, Austin, Texas 78701. Please mark the envelopes containing proposals with the following note in the lower left-hand corner: **IN RESPONSE TO PROPOSAL REQUEST: BOND AND PROGRAM COUNSEL.** All proposals become the property of the Authority. Proposals must set forth full, accurate and complete information as required by this RFQ. Oral responses, instructions or offers will not be considered. The Authority reserves the right to reject any and all responses.

#### **8. Term of the Agreement.**

The contract term shall be for the period beginning September 1, 2009, through August 31, 2010, with an option to renew for the period from September 1, 2010, through August 31, 2011.

#### **9. Proposal Modification.**

Any response may be modified or withdrawn even after received by the Authority at any time prior to the proposal due date. No material changes will be allowed after the expiration of the proposal due date; however, non-substantive corrections or deletions may be made with the approval of Staff. The Authority reserves the exclusive right to review proposals and make an appropriate selection from such proposals. The Authority is not bound to accept any proposal by virtue of this RFQ.

#### **10. Cost Incurred in Responding.**

All costs directly or indirectly related to preparation of a response to the RFQ or any oral presentation required to supplement and/or clarify the RFQ which may be required by the Authority shall be the sole responsibility of, and shall be borne by, your firm.

#### **11. Release of Information and Open Records.**

All proposals shall be deemed, once submitted, to be the property of the Authority and are subject to Texas Public Information Act (the Act). Under the Act, information submitted in response to this RFQ may not be released by the Authority during the proposal evaluation process or prior to the awarding of a contract. After the Authority completes the process and a contract is awarded, proposals and information included therein may be subject to public disclosure under the Act.

TRD-200902203

Dolores Alvarado Hibbs  
General Counsel  
Texas Department of Agriculture  
Filed: June 3, 2009

◆ ◆ ◆  
**Office of the Attorney General**

**Agreed Final Judgment and Permanent Injunction**

Notice is hereby given by the State of Texas of the following proposed resolution of an environmental enforcement lawsuit under the Texas Water and Health and Safety Codes. Before the State may settle a judicial enforcement action, pursuant to §7.110 of the Texas Water Code, the State shall permit the public to comment in writing on the proposed judgment. The Attorney General will consider any written comments and may withdraw or withhold consent to the proposed agreed judgment if the comments disclose facts or considerations that indicate that the consent is inappropriate, improper, inadequate, or inconsistent with the requirements of ch. 7 of the Texas Water Code.

Case Title and Court: *Harris County, Texas and The State of Texas v. Dien Van Tran and My Dung Luu*, Cause No. 2007-70574 in the 80th District, Harris County, Texas.

Background: This is a suit for enforcement of rules of the Texas Commission on Environmental Quality and the Texas Department of State Health Services concerning on-site sewage facilities located at 2007 Chipewa in Harris County.

Nature of Settlement: Proposed Agreed Judgment: The proposed Agreed Final Judgment and Permanent Injunction settles all claims in the suit. The Agreed Final Judgment and Permanent Injunction contains provisions for injunctive relief and attorney fees. The proposed judgment will enjoin the Defendants to maintain the current compliance levels for the on-site sewage facilities. The judgment awards \$2,500 in attorney fees, of which \$1,000 is to the State. The remaining attorney fees are awarded to Harris County.

The Office of the Attorney General will accept written comments relating to this proposed judgment for thirty (30) days from the date of the publication of this notice. Copies of the proposed judgment may be examined at the Office of the Attorney General, 300 W. 15th Street, 10th Floor, Austin, Texas. A copy of the proposed judgment may also be obtained in person or by mail at the above address for the cost of copying. Requests for copies of the judgment and written comments on the proposed judgment should be directed to Sarah Jane Uley, Assistant Attorney General, Office of the Texas Attorney General, P.O. Box 12548, Austin, Texas 78711-2548, (512) 463-2012, facsimile (512) 320-0911.

*For information regarding this publication, contact Zindia Thomas, Agency Liaison, at (512) 936-9901.*

TRD-200902183  
Stacey Napier  
Deputy Attorney General  
Office of the Attorney General  
Filed: June 1, 2009

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**Camino Real Regional Mobility Authority**

**Notice of Availability of Request for Qualifications for Development of Americas Interchange**

The Camino Real Regional Mobility Authority (CRRMA), a political subdivision, is soliciting statements of interest and qualifications from entities interested in pursuing the development of the Americas

Interchange (I-10/Loop 375) Project (the Project) in El Paso, Texas through a design/build comprehensive development agreement (D/B CDA). The Project is generally described as four direct connectors to/from Interstate 10, a primary east-west highway, to/from Loop 375, El Paso's regional beltway surrounding the metropolitan area. The entity selected for the Project, if any, will be responsible for the design and construction of the Project through a D/B CDA. The CRRMA anticipates utilizing, in part, funds allocated through the American Recovery and Reinvestment Act of 2009 for this Project and therefore the Authority and the selected entity will be required to meet all stipulations that come with those funds.

The request for qualifications will be available on or about June 8, 2009. Copies may be obtained from the CRRMA website at <http://www.crrma.org>, or by contacting the CRRMA Office at (915) 541-4986. Periodic updates, addenda, and clarifications will be posted on the CRRMA website and interested parties are responsible for monitoring the website accordingly. There will be a pre-proposal conference for interested parties in El Paso, Texas at 10:00 a.m. M.S.T. on June 19, 2009 at a location to be listed on the CRRMA website. Attendance at the pre-proposal conference is not a condition of submitting a proposal. Final responses must be received in the offices of the CRRMA by or before 4:00 p.m. M.S.T. on July 8, 2009, to be eligible for consideration.

Each proposing entity will be evaluated based on the criteria and process set forth in the RFQ.

Questions concerning this RFQ may be submitted via e-mail to Raymond L. Telles, Executive Director at [tellesrl@crrma.org](mailto:tellesrl@crrma.org) or in writing to: CRRMA, c/o Raymond L. Telles, Executive Director, 2 Civic Center Plaza, 9th Floor, El Paso, Texas 79901. All questions must be received by 5:00 p.m. M.S.T. on June 26, 2009.

TRD-200902217  
Raymond L. Telles  
Executive Director  
Camino Real Regional Mobility Authority  
Filed: June 3, 2009

◆ ◆ ◆  
**Comptroller of Public Accounts**

**Notice of Award**

Pursuant to §1201.027, Texas Government Code; Chapter 2254, Subchapter B, Texas Government Code; and Chapter 404, Subchapter H, Texas Government Code, the Comptroller of Public Accounts (Comptroller) announces the award of the following contract:

A contract is awarded to RBC Capital Markets Corporation, 2711 North Haskell, Suite 2500, Dallas, Texas 75204-2936. The total contract amount for the contract is a \$41,550 fee and \$7,500 in expenses plus reasonable and approved out-of-state travel expenses at cost for each Tax Revenue Anticipation Note issued during the term of the contract. The term of the contract is May 28, 2009 through August 31, 2011.

The Comptroller's Request for Proposals 192a (RFP) related to this contract award was published in the March 6, 2009, issue of the *Texas Register* (34 TexReg. 1731).

TRD-200902095  
Pamela G. Smith  
Deputy General Counsel for Contracts  
Comptroller of Public Accounts  
Filed: May 29, 2009

## 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, 303.005, and 303.009, Texas Finance Code.

The weekly ceiling as prescribed by §303.003 and §303.009 for the period of 06/08/09 - 06/14/09 is 18% for Consumer<sup>1</sup>/Agricultural/Commercial<sup>2</sup>/credit through \$250,000.

The weekly ceiling as prescribed by §303.003 and §303.009 for the period of 06/08/09 - 06/14/09 is 18% for Commercial over \$250,000.

The monthly ceiling as prescribed by §303.005<sup>3</sup> for the period of 06/01/09 - 06/30/09 is 18% for Consumer/Agricultural/Commercial/credit through \$250,000.

The monthly ceiling as prescribed by §303.005 for the period of 06/01/09 - 06/30/09 is 18% for Commercial over \$250,000.

<sup>1</sup>Credit for personal, family or household use.

<sup>2</sup>Credit for business, commercial, investment or other similar purpose.

<sup>3</sup>For variable rate commercial transactions only.

TRD-200902191

Leslie L. Pettijohn

Commissioner

Office of Consumer Credit Commissioner

Filed: June 2, 2009

## Court Reporters Certification Board

### Certification of Court Reporters

Following the examination of applicants on April 18, 2009, the Texas Court Reporters Certification Board certified to the Supreme Court of Texas the following individuals who are qualified in the method indicated to practice shorthand reporting pursuant to Chapter 52 of the Texas Government Code, V.T.C.A.:

MACHINE SHORTHAND: MOLLY CARTER - CORPUS CHRISTI, TX; LAUREN MORRISON - KILLEEN, TX; EMILY ROGERS - MIDLOTHIAN, TX; CAROLIN PEEK - WAXAHACHIE, TX; JENNIFER JACOBS - DALLAS, TX; LISA RUIZ - CORPUS CHRISTI, TX; CARLA DAVIS - HOUSTON, TX; JONATHAN DAWSON - FORT WORTH, TX; and KIMBERLY CLARK - RED OAK, TX.

TRD-200902056

Sheryl Jones

Administrator of Licensing

Court Reporters Certification Board

Filed: May 28, 2009

## Texas Commission Environmental Quality

### Agreed Orders

The Texas Commission on Environmental Quality (TCEQ or commission) staff is providing an opportunity for written public comment on the listed Agreed Orders (AOs) in accordance with Texas Water Code (the Code), §7.075. Section 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. Section 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 **July 13, 2009**. Section 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 July 13, 2009**. Written comments may also be sent by facsimile machine to the enforcement coordinator at (512) 239-2550. The commission enforcement coordinators are available to discuss the AOs and/or the comment procedure at the listed phone numbers; however, §7.075 provides that comments on the AOs shall be submitted to the commission in **writing**.

(1) COMPANY: Avali Enterprise, Inc. dba Super Food Mart; DOCKET NUMBER: 2009-0335-PST-E; IDENTIFIER: RN102242567; LOCATION: Houston, Harris County; TYPE OF FACILITY: convenience store with retail sales of gasoline; RULE VIOLATED: 30 Texas Administrative Code (TAC) §115.245(2) and Texas Health and Safety Code (THSC), §382.085(b), by failing to verify proper operation of the Stage II vapor recovery system (VRS) and the Stage II vapor space manifolding and dynamic back pressure; PENALTY: \$3,112; ENFORCEMENT COORDINATOR: Mike Pace, (817) 588-5800; REGIONAL OFFICE: 5425 Polk Avenue, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(2) COMPANY: BASF FINA Petrochemicals Limited Partnership; DOCKET NUMBER: 2009-0316-AIR-E; IDENTIFIER: RN100216977; LOCATION: Port Arthur, Jefferson County; TYPE OF FACILITY: petrochemical manufacturing plant; RULE VIOLATED: 30 TAC §§101.20(3), 116.115(b)(2)(F) and (c), and 122.143(4), Federal Operating Permit (FOP) Number O-2551, Special Terms and Conditions (STC) Number 11, New Source Review (NSR) Permit Number 36644/PSD-TX-903M1, Special Condition (SC) Number 1, and THSC, §382.085(b), by failing to maintain an emission rate below the allowable limit for nitrogen oxide; PENALTY: \$53,900; Supplemental Environmental Project (SEP) offset amount of \$21,560 applied to West Port Arthur Home Energy Efficiency Program; ENFORCEMENT COORDINATOR: James Nolan, (512) 239-6634; REGIONAL OFFICE: 3870 Eastex Freeway, Beaumont, Texas 77703-1830, (409) 898-3838.

(3) COMPANY: Becky B. Burns; DOCKET NUMBER: 2009-0756-WOC-E; IDENTIFIER: RN104190079; LOCATION: Corsicana, Navarro County; TYPE OF FACILITY: wastewater licensing; RULE VIOLATED: 30 TAC §30.5(a), by failing to obtain a required occupational license; PENALTY: \$210; ENFORCEMENT COORDINATOR: Kirk Schoppe, (512) 239-0489; REGIONAL OFFICE: 2309 Gravel Drive, Fort Worth, Texas 76118-6951, (817) 588-5800.

(4) COMPANY: Dallas Texas Properties, Inc. dba Howdy Doody Number 11; DOCKET NUMBER: 2009-0393-PST-E; IDENTIFIER: RN101533529; LOCATION: Arlington, Tarrant County; TYPE OF FACILITY: convenience store with retail sales of gasoline; RULE VIOLATED: 30 TAC §115.248(1) and THSC, §382.085(b), by failing to ensure that at least one station representative received training in

the operation and maintenance of the Stage II VRS and each current employee received in-house Stage II vapor recovery training; 30 TAC §115.245(2) and THSC, §382.085(b), by failing to verify proper operation of the Stage II equipment; 30 TAC §334.50(b)(1)(A) and the Code, §26.3475(c)(1), by failing to ensure that all underground storage tanks (USTs) are monitored in a manner which will detect a release; 30 TAC §334.50(b)(2) and the Code, §26.3475(a), by failing to provide release detection for the piping associated with the USTs; 30 TAC §334.50(b)(2)(A)(iii) and the Code, §26.3475(a), by failing to test the line leak detectors at least once per year for performance and operational reliability; 30 TAC §334.50(d)(1)(B)(ii) and the Code, §26.3475(c)(1), by failing to conduct reconciliation of detailed inventory control records; 30 TAC §334.50(d)(1)(B)(iii)(I) and the Code, §26.3475(c)(1), by failing to record inventory volume measurement for regulated substance inputs, withdrawals, and the amount still remaining in the tank each operating day; 30 TAC §334.48(c), by failing to conduct effective manual or automatic inventory control procedures for all USTs involved in the retail sale of petroleum substances used as motor fuel; 30 TAC §334.45(c)(3)(A), by failing to install an emergency shutoff valve on each pressurized delivery or product line and ensure that it is securely anchored at the base of the dispenser; and 30 TAC §334.49(b)(2) and the Code, §26.3475(d), by failing to provide corrosion protection to all underground components of an UST system; PENALTY: \$10,621; ENFORCEMENT COORDINATOR: Judy Kluge, (817) 588-5800; REGIONAL OFFICE: 2309 Gravel Drive, Fort Worth, Texas 76118-6951, (817) 588-5800.

(5) COMPANY: DCP Midstream, LP; DOCKET NUMBER: 2009-0123-AIR-E; IDENTIFIER: RN100219955; LOCATION: Gruver, Hansford County; TYPE OF FACILITY: natural gas plant; RULE VIOLATED: 30 TAC §113.1090, 40 Code of Federal Regulations (CFR) §63.6600(a), and THSC, §382.085(b), by failing to limit the formaldehyde concentration to 350 parts per billion or less at 15% oxygen or to reduce formaldehyde emissions by 76% or more for a reciprocating internal combustion engine; PENALTY: \$7,600; SEP offset amount of \$3,040 applied to Texas Association of Resource Conservation and Development Areas, Inc. (RC&D) - Abandoned Tire Clean-Up; ENFORCEMENT COORDINATOR: Brian Elliott, (512) 239-6162; REGIONAL OFFICE: 3918 Canyon Drive, Amarillo, Texas 79109-4933, (806) 353-9251.

(6) COMPANY: City of Del Rio; DOCKET NUMBER: 2009-0284-PWS-E; IDENTIFIER: RN101215978; LOCATION: Del Rio, Val Verde County; TYPE OF FACILITY: public water supply (PWS); RULE VIOLATED: 30 TAC §290.111(f)(2)(C) and (h)(2), by failing to continuously monitor the quality of the water produced by each membrane unit and record the monitoring results; 30 TAC §290.111(h)(7) and (11), by failing to submit the membrane monthly operating report (MMOR); and 30 TAC §205.6 and the Code, §5.702, by failing to pay all general permit storm water fees; PENALTY: \$2,992; ENFORCEMENT COORDINATOR: Epifanio Villarreal, (361) 825-3100; REGIONAL OFFICE: 707 East Calton Road, Suite 304, Laredo, Texas 78041-3887, (956) 791-6611.

(7) COMPANY: City of Eagle Pass Water Works System; DOCKET NUMBER: 2009-0333-PWS-E; IDENTIFIER: RN101387710; LOCATION: Eagle Pass, Maverick County; TYPE OF FACILITY: PWS; RULE VIOLATED: 30 TAC §290.44(d)(2), by failing to provide increased pressure by means of booster pumps taking suction from the storage tanks or obtain an exception by acquiring plan approval by the executive director; 30 TAC §290.42(j), by failing to use an approved chemical or media for the disinfection of potable water that conforms to American National Standards Institute/National Sanitation Foundation standards; 30 TAC §290.110(c)(1)(A), by failing to continuously record the disinfectant residual of the water entering the distribution system; 30 TAC §290.111(h)(2), by failing to

submit properly completed surface water monthly operating reports (SWMORs); 30 TAC §290.111(h)(7) and (11), by failing to submit the MMOR; and 30 TAC §290.39(h)(3), by failing to notify the executive director in writing as to the completion of the ultra filtration membrane plant and attest to the fact that the completed work is substantially in accordance with the plans on file with the commission; PENALTY: \$6,466; ENFORCEMENT COORDINATOR: Epifanio Villarreal, (361) 825-3100; REGIONAL OFFICE: 14250 Judson Road, San Antonio, Texas 78233-4480, (210) 490-3096.

(8) COMPANY: East Texas Precast Company, Limited; DOCKET NUMBER: 2009-0199-IWD-E; IDENTIFIER: RN104750963; LOCATION: Hempstead, Waller County; TYPE OF FACILITY: concrete products; RULE VIOLATED: 30 TAC §305.125(1), Texas Pollutant Discharge Elimination System (TPDES) General Permit Number TXG110719, Part III, Section A, and the Code, §26.121(a), by failing to comply with the permitted effluent limitations for total suspended solids (TSS) and pH; and the Code, §5.702 and §26.0135(h), by failing to pay overdue general permits wastewater fees and penalties; PENALTY: \$1,940; ENFORCEMENT COORDINATOR: Carlie Konkol, (361) 825-3100; REGIONAL OFFICE: 5425 Polk Avenue, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(9) COMPANY: Flint Hills Resources, LP; DOCKET NUMBER: 2009-0121-AIR-E; IDENTIFIER: RN100217389; LOCATION: Port Arthur, Jefferson County; TYPE OF FACILITY: petrochemical manufacturing plant; RULE VIOLATED: 30 TAC §§101.20(3), 116.715(a), and 122.143(4), Flexible Permit Number 16989/PSD-TX-794, SC Number 1, FOP Number O-01317, STC Number 16, and THSC, §382.085(b), by failing to prevent unauthorized emissions; PENALTY: \$12,950; ENFORCEMENT COORDINATOR: Kirk Schoppe, (512) 239-0489; REGIONAL OFFICE: 3870 Eastex Freeway, Beaumont, Texas 77703-1830, (409) 898-3838.

(10) COMPANY: Hieu Vo dba Gulfway Foodmart; DOCKET NUMBER: 2009-0348-PST-E; IDENTIFIER: RN101762219; LOCATION: Port Arthur, Jefferson County; TYPE OF FACILITY: convenience store with retail sales of gasoline; RULE VIOLATED: 30 TAC §334.10(b), by failing to maintain the required UST records and make them immediately available for the inspection upon request by agency personnel; 30 TAC §334.48(c), by failing to conduct effective manual or automatic inventory control procedures for all USTs; 30 TAC §334.50(d)(1)(B)(ii) and the Code, §26.3475(c)(1), by failing to provide proper release protection for the UST system by failing to conduct reconciliation of detailed inventory control records; 30 TAC §334.50(d)(1)(B)(iii)(I) and the Code, §26.3475(c)(1), by failing to record inventory volume measurement for regulated substance inputs, withdrawals, and the amount still remaining in the tank each operating day; 30 TAC §334.8(c)(5)(C), by failing to ensure that a legible tag, label, or marking with the tank number is permanently applied upon or affixed to either the top of the fill tube or to a nonremovable point in the immediate area of the fill tube for each regulated UST; 30 TAC §115.246(7)(A) and THSC, §382.085(b), by failing to maintain Stage II records at the station and make them immediately available for review upon request by agency personnel; 30 TAC §115.248(1) and THSC, §382.085(b), by failing to ensure that at least one station representative received training in the operation and maintenance of the Stage II VRS and each current employee receives in-house Stage II vapor recovery training regarding the purpose and operation of the VRS; 30 TAC §115.245(2) and THSC, §382.085(b), by failing to verify proper operation of the Stage II equipment and the Stage II vapor space manifolding and dynamic back pressure; and 30 TAC §334.46(g)(1)(G) and (H), by failing to ensure that all monitoring wells and observation wells are properly capped, labeled, and secured or locked to prevent unauthorized access, tampering, accidental depositing of unauthorized substances, and designed to divert surface

runoff away from the well; PENALTY: \$12,269; ENFORCEMENT COORDINATOR: Judy Kluge, (817) 588-5800; REGIONAL OFFICE: 3870 Eastex Freeway, Beaumont, Texas 77703-1830, (409) 898-3838.

(11) COMPANY: City of Houston; DOCKET NUMBER: 2009-0375-MWD-E; IDENTIFIER: RN101518298; LOCATION: Harris County; TYPE OF FACILITY: wastewater treatment system; RULE VIOLATED: 30 TAC §305.125(1), TPDES Permit Number WQ0012418001, Effluent Limitations and Monitoring Requirements Number 1, and the Code, §26.121(a), by failing to comply with permit effluent limits for TSS and carbonaceous biochemical oxygen demand; PENALTY: \$2,540; SEP offset amount of \$2,032 applied to Armand Bayou Nature Center Coastal Tall Grass Management-Prescribed Burn Program and Prairie Restoration Project; ENFORCEMENT COORDINATOR: Harvey Wilson, (512) 239-0321; REGIONAL OFFICE: 5425 Polk Avenue, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(12) COMPANY: City of Jacksonville; DOCKET NUMBER: 2008-1810-MWD-E; IDENTIFIER: RN101613305; LOCATION: Cherokee County; TYPE OF FACILITY: wastewater treatment; RULE VIOLATED: 30 TAC §305.125(1), TPDES Permit Number WQ0010693001, Permit Conditions 2.g., and the Code, §26.121(a)(1), by failing to prevent the unauthorized discharge of wastewater into water in the state; PENALTY: \$5,400; SEP offset amount of \$5,400 applied to holding a one-day cleanup event to collect, properly dispose, or recycle household bulky solid waste items; ENFORCEMENT COORDINATOR: Samuel Short, (512) 239-5363; REGIONAL OFFICE: 2916 Teague Drive, Tyler, Texas 75701-3734, (903) 535-5100.

(13) COMPANY: KMCO, L.P.; DOCKET NUMBER: 2009-0299-AIR-E; IDENTIFIER: RN101613511; LOCATION: Crosby, Harris County; TYPE OF FACILITY: industrial organic chemical production plant; RULE VIOLATED: 30 TAC §122.143(4) and §122.145(2)(A), FOP Number O-01441, General Terms and Condition (GTC) and Special Condition Number 8, and THSC, §382.085(b), by failing to report a deviation; 30 TAC §116.115(c) and §122.143(4), FOP Number O-01441, SC Number 8, NSR Permit Number 9383, SC Number 27, and THSC, §382.085(b), by failing to submit the results of sampling/testing of the cooling tower system volatile organic compound emissions; 30 TAC §116.115(c) and §122.143(4), FOP Number O-01441, GTC and SC Number 8, NSR Permit Number 9383, SC Numbers 36, 41.B., and 41.F., and THSC, §382.085(b), by failing to maintain at least two years of records of leak test and control method used for tank truck/railcar loading and unloading operations; 30 TAC §116.115(b)(2)(E)(i) and §122.143(4), FOP Number O-01441, GTC and SC Numbers 3.B.iii. and 8, and THSC, §382.085(b), by failing to conduct annual visible emission observations of 98 stationary vents during the 12 months prior to the investigation and to demonstrate compliance with the annual mass emissions for the stationary vents by maintaining records of production and operating hours for each individual vent; 30 TAC §116.115(c) and §122.143(4), FOP Permit Number O-01441, GTC and SC Number 8, NSR Permit Number 9383, SC Numbers 31, 36, and 45, and THSC, §382.085(b), by failing to maintain temperature records of the ethylene oxide storage tanks; and 30 TAC §111.111(a)(1)(B) and §122.143(4), FOP Permit Number O-01441, GTC and SC Number 3.B.i., and THSC, §382.085(b), by failing to limit opacity from the natural gas-fired heater to 20%; PENALTY: \$21,842; ENFORCEMENT COORDINATOR: Trina Grieco, (210) 490-3096; REGIONAL OFFICE: 5425 Polk Avenue, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(14) COMPANY: Load Trail, Limited; DOCKET NUMBER: 2008-1220-IHW-E; IDENTIFIER: RN101462570; LOCATION: Sumner, Lamar County; TYPE OF FACILITY: trailer manufactur-

ing; RULE VIOLATED: 30 TAC §335.2 and §335.4, by failing to prevent the unauthorized treatment and disposal of industrial and hazardous waste; 30 TAC §335.6(a), by failing to provide notification of the generation of hazardous waste; 30 TAC §335.62 and 40 CFR §262.11, by failing to perform a hazardous waste determination on all wastes generated at the facility; 30 TAC §335.69(a)(1)(A) and 40 CFR §262.34(a)(1)(i) and §265.173(a), by failing to close hazardous waste containers except when adding or removing waste; 30 TAC §335.69(a)(1)(A) and 40 CFR §262.34(a)(1)(i) and §265.15(d), by failing to properly document weekly inspections of hazardous waste container storage areas; 30 TAC §335.10(a) and §335.431(c) and 40 CFR §262.20(a) and §268.7(a)(8), by failing to maintain records of hazardous waste generated at the facility; 30 TAC §334.474 and §335.479, by failing to maintain or provide the required source reduction and waste minimization plan; 30 TAC §335.9(a)(2), by failing to submit the annual waste summaries; and 30 TAC §335.69(a)(2) and (3) and 40 CFR §262.34(a)(2) and (3), by failing to label each container of hazardous waste in the container storage area with the beginning accumulation date and the description of the contents; PENALTY: \$44,630; ENFORCEMENT COORDINATOR: Michael Meyer, (512) 239-4492; REGIONAL OFFICE: 2916 Teague Drive, Tyler, Texas 75701-3734, (903) 535-5100.

(15) COMPANY: Longhorn Mobile Home Community, Limited; DOCKET NUMBER: 2009-0079-PWS-E; IDENTIFIER: RN101271500; LOCATION: Houston, Harris County; TYPE OF FACILITY: PWS; RULE VIOLATED: 30 TAC §190.109(c)(2)(A)(ii) and §290.122(c)(2)(A) and THSC, §382.085(b), by failing to collect water samples for monthly bacteriological analysis and by failing to provide public notification of the failure to conduct monthly bacteriological sampling; PENALTY: \$4,212; ENFORCEMENT COORDINATOR: Lauren Smitherman, (512) 239-5223; REGIONAL OFFICE: 5425 Polk Avenue, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(16) COMPANY: Marathon Petroleum Company, LLC; DOCKET NUMBER: 2008-1709-AIR-E; IDENTIFIER: RN100210608; LOCATION: Texas City, Galveston County; TYPE OF FACILITY: petroleum refinery; RULE VIOLATED: 30 TAC §§101.20(1) and (2), 115.352(4), 116.715(a), and 122.143(4), 40 CFR §60.482-6(a)(1) and §63.167(a)(1), NSR Permit Number 22433, SC Number 10.E., FOP Number O-01380, STC Numbers 1.A. and 21, and THSC, §382.085(b), by failing to seal open-ended valves with a cap, blind flange, plug, or second valve; 30 TAC §115.114(a)(4) and §122.143(4), FOP Number O-01380, STC Number 1.A., and THSC, §382.085(b), by failing to repair or empty or degas external floating roof tank number 111 within 60 days of the discovery of pinhole leaks on the roof deck; 30 TAC §115.546(2)(C) and §122.143(4), FOP Number O-01380, STC Number 8.A.(vi), and THSC, §382.085(b), by failing to maintain records of monitoring for carbon canister breakthrough; 30 TAC §§101.20(2), 115.112(a)(2)(B), and 122.143(4), 40 CFR §63.119(b)(4) and §63.646(a), FOP Number O-01372, STC Number 1.A., and THSC, §382.085(b), by failing to maintain vacuum breakers in a closed position during normal operation; 30 TAC §101.20(2) and §122.143(4), 40 CFR §63.120(b)(8) and §63.646(a), FOP Number O-01380, STC Number 1.A., and THSC, §382.085(b), by failing to repair the tank floating roof primary seal, empty the tank, or request an extension for seal repair within 45 days of determining that the seal needed replacement; 30 TAC §122.143(4) and §106.263(g), FOP Number O-01380, STC Number 21, and THSC, §382.085(b), by failing to maintain records to demonstrate compliance with the emission limits in 30 TAC §106.4(a)(1) - (3) and §106.263; 30 TAC §101.20(2) and §122.143(4), 40 CFR §61.356(f)(2)(i)(G), FOP Number O-01380, STC Number 1.A., and THSC, §382.085(b), by failing to maintain records of design analysis for carbon canisters; 30 TAC §101.20(2) and §122.143(4), 40 CFR §61.12(c), FOP Number O-01380, STC

Number 12.E., and THSC, §382.085(b), by failing to maintain and operate lift station 26b carbon canisters in a manner consistent with good air pollution control practices for minimizing emissions; 30 TAC §101.20(2) and §122.143(4), 40 CFR §61.354(d), FOP Number O-01380, STC Number 1.A., and THSC, §382.085(b), by failing to properly conduct monitoring of carbon canisters; 30 TAC §101.20(2) and §122.143(4), 40 CFR §61.354(b)(2), FOP Number O-01380, STC Number 1.A., and THSC, §382.085(b), by failing to monitor the waste streams entering the enhanced biodegradation unit month as required; and 30 TAC §101.20(2) and §122.143(4), 40 CFR §61.342(f)(2), FOP Number O-01380, STC Number 1.A., and THSC, §382.085(b), by failing to provide proper notification with each shipment of waste for offsite treatment; PENALTY: \$115,347; SEP offset amount of \$46,139 applied to operating and maintaining the existing off-site ambient air benzene and meteorological monitoring station; ENFORCEMENT COORDINATOR: Miriam Hall, (512) 239-1044; REGIONAL OFFICE: 5425 Polk Avenue, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(17) COMPANY: Maverick County; DOCKET NUMBER: 2009-0197-PWS-E; IDENTIFIER: RN101253565; LOCATION: Eagle Pass, Maverick County; TYPE OF FACILITY: PWS; RULE VIOLATED: 30 TAC §290.110(e)(2) and (5) and §290.111(h)(3) and (11), by failing to submit the SWMORs; 30 TAC §290.110(b)(2) and (f)(4) and THSC, §341.0315(c), by failing to maintain a minimum disinfectant residual of 0.5 milligrams per liter (mg/L) chloramine in the water entering the distribution system for a period longer than four consecutive hours; 30 TAC §290.110(b)(4) and (f)(6) and THSC, §341.0315(c), by failing to maintain a minimum disinfectant residual of 0.5 mg/L chloramine throughout the distribution system in more than five percent of the samples collected each month, for any two consecutive months; and 30 TAC §§21.4, 285.21(b), and 290.51 and the Code, §5.702, by failing to pay all consolidated water quality, on-site wastewater treatment research council, and public health service fees; PENALTY: \$2,652; SEP offset amount of \$2,652 applied to RC&D - Abandoned Tire Clean-Up; ENFORCEMENT COORDINATOR: Rebecca Clausewitz, (210) 490-3096; REGIONAL OFFICE: 14250 Judson Road, San Antonio, Texas 78233-4480, (210) 490-3096.

(18) COMPANY: Douglas Meier dba Meier Recycle Center; DOCKET NUMBER: 2009-0080-WQ-E; IDENTIFIER: RN105447460; LOCATION: Ennis, Ellis County; TYPE OF FACILITY: scrap material recycling business; RULE VIOLATED: 30 TAC §281.25(a)(4) and 40 CFR §122.26(c), by failing to obtain authorization to discharge storm water associated with industrial activities; PENALTY: \$3,150; ENFORCEMENT COORDINATOR: Tom Jecha, (512) 239-2576; REGIONAL OFFICE: 2309 Gravel Drive, Fort Worth, Texas 76118-6951, (817) 588-5800.

(19) COMPANY: MillerCoors, LLC; DOCKET NUMBER: 2009-0297-AIR-E; IDENTIFIER: RN102649399; LOCATION: Fort Worth, Tarrant County; TYPE OF FACILITY: brewery; RULE VIOLATED: 30 TAC §116.115(c), NSR Permit Number 1498, SC Number 4, and THSC, §382.085(b), by failing to maintain pH of the biogas hydrogen sulfide scrubber solution at or above 10.6 standard units; 30 TAC §116.115(c), NSR Permit Number 1498, SC Number 1, and THSC, §382.085(b), by failing to comply with permitted emission limits; and 30 TAC §115.412(1)(A) and THSC, §382.085(b), by failing to keep lids on three degreaser units closed when not in use; PENALTY: \$7,640; ENFORCEMENT COORDINATOR: Bryan Elliott, (512) 239-6162; REGIONAL OFFICE: 2309 Gravel Drive, Fort Worth, Texas 76118-6951, (817) 588-5800.

(20) COMPANY: Royal Oak Water System, Inc.; DOCKET NUMBER: 2008-1126-PWS-E; IDENTIFIER: RN101257699; LOCATION: Kerr County; TYPE OF FACILITY: PWS; RULE VIOLATED:

30 TAC §290.43(e), by failing to provide a properly constructed intruder-resistant fence; 30 TAC §290.46(f)(2), (3)(A)(i)(III), (ii)(III), and (iii) - (vii), by failing to provide water system records to commission personnel at time of the investigation; 30 TAC §290.121(a), by failing to develop and maintain an up-to-date chemical and microbiological monitoring plan; 30 TAC §290.43(c)(6), by failing to maintain all storage tanks and associated appurtenances in a watertight condition; 30 TAC §290.43(d)(3), by failing to provide a device to readily determine the air-water volume for the pressure tank; 30 TAC §290.46(v), by failing to ensure that all electrical wiring is securely installed in compliance with local or national electrical code; 30 TAC §290.43(c)(1), by failing to provide the ground storage tank with roof vents in strict accordance with American Water Works Association standards; 30 TAC §290.41(c)(3)(J), by failing to provide a concrete sealing block that is sloped to drain away and not less than 0.25 inches per foot; 30 TAC §290.41(c)(3)(O), by failing to provide an intruder-resistant fence or lockable building for well number two; 30 TAC §290.42(e)(2), by failing to provide disinfection at a point of application prior to the storage tank; 30 TAC §290.43(d)(7), by failing to maintain the pressure tank in a water-tight condition; and 30 TAC §290.46(m)(6), by failing to initiate maintenance and housekeeping practices to ensure the good working condition and general appearance of the system's facilities and equipment; PENALTY: \$3,893; ENFORCEMENT COORDINATOR: Andrea Linson-Mgbeoduru, (512) 239-1482; REGIONAL OFFICE: 14250 Judson Road, San Antonio, Texas 78233-4480, (210) 490-3096.

(21) COMPANY: Sabina Petrochemicals, LLC; DOCKET NUMBER: 2009-0140-AIR-E; IDENTIFIER: RN100216977; LOCATION: Port Arthur, Jefferson County; TYPE OF FACILITY: petrochemical manufacturing plant; RULE VIOLATED: 30 TAC §§101.20(3), 116.115(b)(2)(F) and (c), and 122.143(4), NSR Permit Number 41945/PSD-TX-950/N-018, SC Number 1, FOP Number O-02629, STC Number 8, and THSC, §382.085(b), by failing to maintain an emission rate below the maximum allowable rate table limit; PENALTY: \$7,550; ENFORCEMENT COORDINATOR: James Nolan, (512) 239-6634; REGIONAL OFFICE: 3870 Eastex Freeway, Beaumont, Texas 77703-1830, (409) 898-3838.

(22) COMPANY: Shell Oil Company and Shell Chemical, LP; DOCKET NUMBER: 2008-1925-AIR-E; IDENTIFIER: RN100211879; LOCATION: Deer Park, Harris County; TYPE OF FACILITY: petroleum refinery and chemical manufacturing plant; RULE VIOLATED: 30 TAC §§101.20(3), 116.115(b)(2)(F), and 116.715(a), NSR Permit Numbers 3219/PSD-TX-974 and 21262/PSD-TX-928, SC Number 1, General Condition (GC) Number 8, and THSC, §382.085(b), by failing to prevent unauthorized emissions; and 30 TAC §101.201(f) and THSC, §382.085(b), by failing to timely provide information requested by the TCEQ Houston Regional Office regarding the July 17, 2008, emissions event; PENALTY: \$30,423; SEP offset amount of \$15,211 applied to Houston-Galveston AERCO's Clean Cities/Clean Vehicles Program; ENFORCEMENT COORDINATOR: Miriam Hall, (512) 239-1044; REGIONAL OFFICE: 5425 Polk Avenue, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(23) COMPANY: Brian King Sumner; DOCKET NUMBER: 2009-0742-OSI-E; IDENTIFIER: RN103743316; LOCATION: Silbee, Hardin County; TYPE OF FACILITY: on-site sewage licensing; RULE VIOLATED: 30 TAC §285.61(4), by failing to ensure that an authorization to construct has been issued prior to beginning construction of an on-site sewage facility; PENALTY: \$175; ENFORCEMENT COORDINATOR: Harvey Wilson, (512) 239-0321; REGIONAL OFFICE: 3870 Eastex Freeway, Beaumont, Texas 77703-1830, (409) 898-3838.

(24) COMPANY: The Premcor Refining Group, Inc.; DOCKET NUMBER: 2009-0151-AIR-E; IDENTIFIER: RN102584026; LOCATION: Port Arthur, Jefferson County; TYPE OF FACILITY: petroleum refinery; RULE VIOLATED: 30 TAC §§101.20(3), 116.715(a) and (c)(7), and §122.143(4), FOP Number 1498, General Conditions, Flexible Air Permit Number 6825A/PSD-TX-49, SC Number 5A, and THSC, §382.085(b), by failing to prevent unauthorized emissions; PENALTY: \$19,600; SEP offset amount of \$7,840 applied to West Port Arthur Home Energy Efficiency Program; ENFORCEMENT COORDINATOR: Raymond Marlow, (409) 898-3838; REGIONAL OFFICE: 3870 Eastex Freeway, Beaumont, Texas 77703-1830, (409) 898-3838.

(25) COMPANY: Whitestone Custom Homes, Limited; DOCKET NUMBER: 2009-0743-WQ-E; IDENTIFIER: RN105703730; LOCATION: Bexar County; TYPE OF FACILITY: general contractor; RULE VIOLATED: 30 TAC §281.25(a)(4), by failing to obtain a construction general permit; PENALTY: \$700; ENFORCEMENT COORDINATOR: Harvey Wilson, (512) 239-0321; REGIONAL OFFICE: 14250 Judson Road, San Antonio, Texas 78233-4480, (210) 490-3096.

TRD-200902185

Kathleen C. Decker

Director, Litigation Division

Texas Commission on Environmental Quality

Filed: June 2, 2009



#### Enforcement Orders

An agreed order was entered regarding Nisar Ahmad dba C-Store, Docket No. 2005-1557-PST-E on May 22, 2009, assessing \$17,655 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Kari Gilbreth, Staff Attorney, at (512) 239-1320, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A default order was entered regarding Tam Phuong Corporation dba AB Cleaners, Docket No. 2006-1355-DCL-E on May 22, 2009, assessing \$1,185 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Rudy Calderon, Staff Attorney, at (512) 239-0600, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Oscar Food Corp. dba Circle A Store, Docket No. 2006-1855-PST-E on May 22, 2009, assessing \$16,770 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Becky Combs, Staff Attorney, at (512) 239-6939, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Swenson Water Supply Corporation, Docket No. 2007-0302-PWS-E on May 22, 2009, assessing \$2,250 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Benjamin Thompson, Staff Attorney, at (512) 239-0600, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Republic Waste Services of Texas, Ltd., Docket No. 2007-0654-IHW-E on May 22, 2009, assessing \$5,000 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Gary Shiu, Staff Attorney, at (713) 422-8916, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A default order was entered regarding Raul R. Martinez, Docket No. 2007-0810-PST-E on May 22, 2009, assessing \$5,250 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Tommy Tucker Henson II, Staff Attorney, at (512) 239-0946, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Pencco, Inc., Docket No. 2007-0941-MSW-E on May 22, 2009, assessing \$8,450 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Jennifer Cook, Staff Attorney, at (512) 239-1873, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding City of Edgewood, Docket No. 2007-1089-PWS-E on May 22, 2009, assessing \$16,321 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Gary Shiu, Staff Attorney, at (713) 422-8916, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Bhayani Investment, Inc. dba Mickey's Pit Stop, Docket No. 2007-1513-PST-E on May 22, 2009, assessing \$3,500 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Becky Combs, Staff Attorney, at (512) 239-6939, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding City of Laredo, Docket No. 2007-1751-WQ-E on May 22, 2009, assessing \$12,933 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Kari Gilbreth, Staff Attorney, at (512) 239-1320, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Hien Huynh dba Food Store 9, Docket No. 2007-1793-PST-E on May 22, 2009, assessing \$4,500 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Lena Roberts, Staff Attorney, at (512) 239-0019, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Vinklerek Underground Utilities Co., Docket No. 2007-1871-PST-E on May 22, 2009, assessing \$3,675 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Benjamin Thompson, Staff Attorney, at (512) 239-0600, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding One Way Hauling, Inc., Docket No. 2007-1964-WQ-E on May 22, 2009, assessing \$14,500 in administrative penalties.



Information concerning any aspect of this order may be obtained by contacting Barham A. Richard, Staff Attorney, at (512) 239-0600, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Jose Ibarra, Docket No. 2007-1989-MLM-E on May 22, 2009, assessing \$2,000 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Dinniah Chahin, Staff Attorney, at (512) 239-0600, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Addison Enterprises, Inc. dba Atwell 66, Docket No. 2007-2010-PST-E on May 22, 2009, assessing \$1,070 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Anna Cox, Staff Attorney, at (512) 239-0600, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Ernesto Siller, Docket No. 2008-0231-MSW-E on May 22, 2009, assessing \$1,050 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Lena Roberts, Staff Attorney, at (512) 239-0019, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A default order was entered regarding Huong Tran, Docket No. 2008-0280-PST-E on May 22, 2009, assessing \$21,000 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Benjamin Thompson, Staff Attorney, at (512) 239-0600, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Trash Solutions, L.L.C. dba Wasted, Docket No. 2008-0313-MSW-E on May 22, 2009, assessing \$1,070 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Benjamin Thompson, Staff Attorney, at (512) 239-0600, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding City of Texarkana, Docket No. 2008-0632-PWS-E on May 22, 2009, assessing \$715 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Rebecca Clausewitz, Enforcement Coordinator, at (210) 403-4012, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Diamond Shamrock Refining Company, L.P., Docket No. 2008-0738-AIR-E on May 22, 2009, assessing \$8,450 in administrative penalties with \$1,690 deferred.

Information concerning any aspect of this order may be obtained by contacting Trina Grieco, Enforcement Coordinator, at (210) 403-4006, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Juan G. Rodriguez dba El Ranchito Convenience Store, Docket No. 2008-0814-PST-E on May 22, 2009, assessing \$6,548 in administrative penalties with \$1,309 deferred.

Information concerning any aspect of this order may be obtained by contacting Tom Greimel, Enforcement Coordinator, at (512) 239-5690, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding The Dow Chemical Company, Docket No. 2008-0843-AIR-E on May 22, 2009, assessing \$202,325 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Rebecca Johnson, Enforcement Coordinator, at (361) 825-3420, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Petrus Adrianus Boekhorst dba Petal Dairy, Docket No. 2008-0972-MLM-E on May 22, 2009, assessing \$11,776 in administrative penalties with \$2,355 deferred.

Information concerning any aspect of this order may be obtained by contacting Merrilee Hupp, Enforcement Coordinator, at (512) 239-4490, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A default and shutdown order was entered regarding Reddy-Gator Inc. and Swati Holding, Company dba Gator Stop 3, Docket No. 2008-1005-PST-E on May 22, 2009, assessing \$17,850 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Stephanie Frazee, Staff Attorney, at (512) 239-0600, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding The Premcor Refining Group Inc., Docket No. 2008-1043-AIR-E on May 22, 2009, assessing \$17,100 in administrative penalties with \$3,420 deferred.

Information concerning any aspect of this order may be obtained by contacting Craig Fleming, Enforcement Coordinator, at (512) 239-5806, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Bobby Johnson dba Blastmasters, Docket No. 2008-1054-AIR-E on May 22, 2009, assessing \$16,200 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Suzanne Walrath, Enforcement Coordinator, at (512) 239-2134, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Southwest Convenience Stores, L.L.C., Docket No. 2008-1135-AIR-E on May 22, 2009, assessing \$4,850 in administrative penalties with \$970 deferred.

Information concerning any aspect of this order may be obtained by contacting Cheryl Thompson, Enforcement Coordinator, at (817) 588-5886, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Aqua Utilities, Inc. dba Aqua Texas, Inc., Docket No. 2008-1294-MWD-E on May 22, 2009, assessing \$7,410 in administrative penalties with \$1,482 deferred.

Information concerning any aspect of this order may be obtained by contacting Heather Brister, Enforcement Coordinator, at (254) 761-3034, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding City of Kerens, Docket No. 2008-1486-MWD-E on May 22, 2009, assessing \$16,725 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Craig Fleming, Enforcement Coordinator, at (512) 239-5806, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Maximus Coffee Group, LP, Docket No. 2008-1619-AIR-E on May 22, 2009, assessing \$3,500 in administrative penalties with \$700 deferred.

Information concerning any aspect of this order may be obtained by contacting Ross Fife, Enforcement Coordinator, at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Eagle Rock Field Services, L.P., Docket No. 2008-1637-AIR-E on May 22, 2009, assessing \$57,589 in administrative penalties with \$11,517 deferred.

Information concerning any aspect of this order may be obtained by contacting John Muennink, Enforcement Coordinator, at (361) 825-3423, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Norit Americas, Inc., Docket No. 2008-1671-AIR-E on May 22, 2009, assessing \$28,760 in administrative penalties with \$5,752 deferred.

Information concerning any aspect of this order may be obtained by contacting Miriam Hall, Enforcement Coordinator, at (512) 239-1044, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding North Texas District Council Assemblies of God, Docket No. 2008-1704-MWD-E on May 22, 2009, assessing \$7,050 in administrative penalties with \$1,410 deferred.

Information concerning any aspect of this order may be obtained by contacting Samuel Short, Enforcement Coordinator, at (512) 239-5363, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding PRO MOBIL, INC. dba Pro Mobil, Docket No. 2008-1730-PST-E on May 22, 2009, assessing \$8,750 in administrative penalties with \$1,750 deferred.

Information concerning any aspect of this order may be obtained by contacting Judy Kluge, Enforcement Coordinator, at (817) 588-5825, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding City of Hackberry, Docket No. 2008-1741-MWD-E on May 22, 2009, assessing \$7,800 in administrative penalties with \$1,560 deferred.

Information concerning any aspect of this order may be obtained by contacting Jeremy Escobar, Enforcement Coordinator, at (512) 239-1460, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding TOTAL PETROCHEMICALS USA, INC., Docket No. 2008-1773-AIR-E on May 22, 2009, assessing \$43,103 in administrative penalties with \$8,620 deferred.

Information concerning any aspect of this order may be obtained by contacting Rebecca Johnson, Enforcement Coordinator, at (361) 825-3420, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding E-Z STAR INC. dba EZ Trip Food Stores 05, Docket No. 2008-1780-PST-E on May 22, 2009, assessing \$2,686 in administrative penalties with \$537 deferred.

Information concerning any aspect of this order may be obtained by contacting Michael Pace, Enforcement Coordinator, at (817) 588-5933, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Marlow Water Supply Company, Docket No. 2008-1784-PWS-E on May 22, 2009, assessing \$255 in administrative penalties with \$51 deferred.

Information concerning any aspect of this order may be obtained by contacting Yuliya Dunaway, Enforcement Coordinator, at (210) 403-4077, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding CAHILL INVESTMENTS, INC. dba Resler Chevron, Docket No. 2008-1795-PST-E on May 22, 2009, assessing \$8,125 in administrative penalties with \$1,625 deferred.

Information concerning any aspect of this order may be obtained by contacting Judy Kluge, Enforcement Coordinator, at (817) 588-5825, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding HRH Investments, LP dba John T White Shell, Docket No. 2008-1802-PST-E on May 22, 2009, assessing \$2,411 in administrative penalties with \$482 deferred.

Information concerning any aspect of this order may be obtained by contacting Michael Pace, Enforcement Coordinator, at (817) 588-5933, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Federal Bureau of Prisons, Docket No. 2008-1823-PWS-E on May 22, 2009, assessing \$1,079 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Amanda Henry, Enforcement Coordinator, at (713) 767-3672, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding City of Houston, Docket No. 2008-1871-MWD-E on May 22, 2009, assessing \$7,800 in administrative penalties with \$1,560 deferred.

Information concerning any aspect of this order may be obtained by contacting Steve Villatoro, Enforcement Coordinator, at (512) 239-4930, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Gulf Coast Water Authority, Docket No. 2008-1887-SLG-E on May 22, 2009, assessing \$2,080 in administrative penalties with \$416 deferred.

Information concerning any aspect of this order may be obtained by contacting Heather Brister, Enforcement Coordinator, at (254) 761-3034, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Killeen Majestic Homes, Inc., Docket No. 2008-1889-WQ-E on May 22, 2009, assessing \$2,700 in administrative penalties with \$540 deferred.

Information concerning any aspect of this order may be obtained by contacting Carlie Konkol, Enforcement Coordinator, at (361) 825-3422, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding E.I. du Pont de Nemours and Company, Docket No. 2008-1923-PWS-E on May 22, 2009, assessing \$3,712 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Epifanio Villarreal, Enforcement Coordinator, at (361) 825-3425, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding City of Bardwell, Docket No. 2008-1930-MWD-E on May 22, 2009, assessing \$2,335 in administrative penalties with \$467 deferred.

Information concerning any aspect of this order may be obtained by contacting Jennifer Graves, Enforcement Coordinator, at (956) 430-6023, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding OBBCO Ranch Corporation, Docket No. 2008-1937-AIR-E on May 22, 2009, assessing \$1,100 in administrative penalties with \$220 deferred.

Information concerning any aspect of this order may be obtained by contacting Kirk Schoppe, Enforcement Coordinator, at (512) 239-0489, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Lake Whitney Resorts, LLC, Docket No. 2008-1942-MLM-E on May 22, 2009, assessing \$5,094 in administrative penalties with \$1,018 deferred.

Information concerning any aspect of this order may be obtained by contacting Epifanio Villarreal, Enforcement Coordinator, at (361) 825-3425, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Thomas Enterprises, Inc., Docket No. 2008-1948-EAQ-E on May 22, 2009, assessing \$750 in administrative penalties with \$150 deferred.

Information concerning any aspect of this order may be obtained by contacting Lanae Foard, Enforcement Coordinator, at (512) 239-2554, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Brian Paul Boehning dba Boehning Dairy, Docket No. 2008-1955-MLM-E on May 22, 2009, assessing \$4,380 in administrative penalties with \$876 deferred.

Information concerning any aspect of this order may be obtained by contacting Evette Alvarado, Enforcement Coordinator, at (512) 239-2573, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding City of Amherst, Docket No. 2008-1968-MLM-E on May 22, 2009, assessing \$1,000 in administrative penalties with \$200 deferred.

Information concerning any aspect of this order may be obtained by contacting Michael Graham, Enforcement Coordinator, at (806) 796-7092, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding City of Corpus Christi, Docket No. 2008-1971-PST-E on May 22, 2009, assessing \$1,500 in administrative penalties with \$300 deferred.

Information concerning any aspect of this order may be obtained by contacting Harvey Wilson, Enforcement Coordinator, at (512) 239-0321, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Alfred Sapp, Docket No. 2009-0009-MSW-E on May 22, 2009, assessing \$2,625 in administrative penalties with \$525 deferred.

Information concerning any aspect of this order may be obtained by contacting Ross Fife, Enforcement Coordinator, at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Al Leonard dba Al Leonard Ranch, Docket No. 2009-0020-PWS-E on May 22, 2009, assessing \$291 in administrative penalties with \$58 deferred.

Information concerning any aspect of this order may be obtained by contacting Christopher Keffer, Enforcement Coordinator, at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Leander Independent School District, Docket No. 2009-0023-EAQ-E on May 22, 2009, assessing \$1,875 in administrative penalties with \$375 deferred.

Information concerning any aspect of this order may be obtained by contacting Samuel Short, Enforcement Coordinator, at (512) 239-5363, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Victron Stores, L.P. dba Tiger Mart 61, Docket No. 2009-0025-PST-E on May 22, 2009, assessing \$8,938 in administrative penalties with \$1,787 deferred.

Information concerning any aspect of this order may be obtained by contacting Judy Kluge, Enforcement Coordinator, at (817) 588-5825, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Valet Enterprises, Inc. dba Olmos Mart, Docket No. 2009-0029-PST-E on May 22, 2009, assessing \$4,500 in administrative penalties with \$900 deferred.

Information concerning any aspect of this order may be obtained by contacting Wallace Myers, Enforcement Coordinator, at (512) 239-6580, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Sonterra Development LLC of Jarrell, Texas, Docket No. 2009-0036-MWD-E on May 22, 2009, assessing \$3,440 in administrative penalties with \$688 deferred.

Information concerning any aspect of this order may be obtained by contacting Steve Villatoro, Enforcement Coordinator, at (512) 239-4930, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Michael D. Rose dba Freeway Chevron, Docket No. 2009-0037-PST-E on May 22, 2009, assessing \$5,100 in administrative penalties with \$1,020 deferred.

Information concerning any aspect of this order may be obtained by contacting Elvia Maske, Enforcement Coordinator, at (512) 239-0789, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding HILLSIDE GROCERY, INC. dba Hillside Grocery, Docket No. 2009-0046-PST-E on May 22, 2009, assessing \$5,644 in administrative penalties with \$1,128 deferred.

Information concerning any aspect of this order may be obtained by contacting Steven Lopez, Enforcement Coordinator, at (512) 239-1896, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding S.W.G., Limited Partnership dba Jonestown Liberty Mart, Docket No. 2009-0061-PST-E on May 22, 2009, assessing \$7,419 in administrative penalties with \$1,483 deferred.

Information concerning any aspect of this order may be obtained by contacting Rajesh Acharya, Enforcement Coordinator, at (512) 239-0577, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding RESCAR, INC., Docket No. 2009-0103-AIR-E on May 22, 2009, assessing \$3,050 in administrative penalties with \$610 deferred.

Information concerning any aspect of this order may be obtained by contacting Tom Greimel, Enforcement Coordinator, at (512) 239-5690, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Bluff Manufacturing, Inc., Docket No. 2009-0134-AIR-E on May 22, 2009, assessing \$1,050 in administrative penalties with \$210 deferred.

Information concerning any aspect of this order may be obtained by contacting Audra Benoit, Enforcement Coordinator, at (409) 899-8799, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Horizon Retail LLC MJ's All Season Food Store, Docket No. 2009-0138-PST-E on May 22, 2009, assessing \$5,196 in administrative penalties with \$1,039 deferred.

Information concerning any aspect of this order may be obtained by contacting Rajesh Acharya, Enforcement Coordinator, at (512) 239-0577, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding Texas A&M University, Docket No. 2009-0142-IWD-E on May 22, 2009, assessing \$4,340 in administrative penalties with \$868 deferred.

Information concerning any aspect of this order may be obtained by contacting Tom Jecha, Enforcement Coordinator, at (512) 239-2576, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding FONDREN ADP, LTD. dba Fondren Mobil, Docket No. 2009-0144-PST-E on May 22, 2009, assessing \$3,058 in administrative penalties with \$611 deferred.

Information concerning any aspect of this order may be obtained by contacting Brianna Carlson, Enforcement Coordinator, at (956) 425-6021, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding RACETRAC PETROLEUM, INC. dba Raceway 6774, Docket No. 2009-0157-PST-E on May 22, 2009, assessing \$5,599 in administrative penalties with \$1,119 deferred.

Information concerning any aspect of this order may be obtained by contacting Tom Greimel, Enforcement Coordinator, at (512) 239-5690, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding O'DONNELL OIL & BUTANE COMPANY, INC. dba Borden County Key Pumps, Docket No. 2009-0187-PST-E on May 22, 2009, assessing \$1,855 in administrative penalties with \$371 deferred.

Information concerning any aspect of this order may be obtained by contacting Steven Lopez, Enforcement Coordinator, at (512) 239-1896, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was entered regarding DJL Ventures, Inc. and Bulverde-Springs Branch EMS, Docket No. 2009-0212-MLM-E on May

22, 2009, assessing \$1,900 in administrative penalties with \$380 deferred.

Information concerning any aspect of this order may be obtained by contacting Tom Jecha, Enforcement Coordinator, at (512) 239-2576, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A field citation was entered regarding John D. Walden, Jr., Docket No. 2008-1960-WOC-E on May 22, 2009, assessing \$210 in administrative penalties.

Information concerning any aspect of this citation may be obtained by contacting Melissa Keller, SEP Coordinator, at (512) 239-1768, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A field citation was entered regarding Brazier Construction, Inc., Docket No. 2008-1962-WQ-E on May 22, 2009, assessing \$700 in administrative penalties.

Information concerning any aspect of this citation may be obtained by contacting Melissa Keller, SEP Coordinator, at (512) 239-1768, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A field citation was entered regarding Parkway Construction & Associates, L.P., Docket No. 2009-0040-WQ-E on May 22, 2009, assessing \$700 in administrative penalties.

Information concerning any aspect of this citation may be obtained by contacting Melissa Keller, SEP Coordinator, at (512) 239-1768, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A field citation was entered regarding THE ROSEBUD DEVELOPMENT LTD, Docket No. 2009-0057-WQ-E on May 22, 2009, assessing \$700 in administrative penalties.

Information concerning any aspect of this citation may be obtained by contacting Melissa Keller, SEP Coordinator, at (512) 239-1768, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A field citation was entered regarding Rick Sage dba RCS Auto Recyclers, Docket No. 2009-0113-WQ-E on May 22, 2009, assessing \$700 in administrative penalties.

Information concerning any aspect of this citation may be obtained by contacting Melissa Keller, SEP Coordinator, at (512) 239-1768, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A field citation was entered regarding City of Waco, Docket No. 2009-0240-WQ-E on May 22, 2009, assessing \$700 in administrative penalties.

Information concerning any aspect of this citation may be obtained by contacting Melissa Keller, SEP Coordinator, at (512) 239-1768, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A field citation was entered regarding Sid Wright, Docket No. 2009-0245-WOC-E on May 22, 2009, assessing \$210 in administrative penalties.

Information concerning any aspect of this citation may be obtained by contacting Melissa Keller, SEP Coordinator, at (512) 239-1768, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An order was entered regarding M.V.K, Inc. dba EZ Express 1, Docket No. 2004-00694-PST-E on June 1, 2009, assessing \$1,000 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Steven Lopez, Enforcement Coordinator, at (512) 239-1896, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An order was entered regarding Asad Ali Corporation dba Sunrise Food Mart, Docket No. 2005-2000-PST-E on May 22, 2009, assessing \$2,340 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Harvey Wilson, Enforcement Coordinator, at (512) 239-0321, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

A default order was entered regarding Juan Gomez, Docket No. 2008-0143-LII-E on May 22, 2009, assessing \$625 in administrative penalties.

Information concerning any aspect of this order may be obtained by contacting Ross Fife, Enforcement Coordinator, at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

TRD-200902202

LaDonna Castañuela

Chief Clerk

Texas Commission on Environmental Quality

Filed: June 3, 2009



#### Notice of Meeting on July 16, 2009 in Iowa Colony, Texas Concerning the Force Road Oil and Vacuum Truck Company Proposed State Superfund Site

The purpose of the meeting is to obtain public input and information concerning the proposal to delete the Force Road Oil and Vacuum Truck Company proposed state Superfund site (the site) from the state Superfund registry.

The executive director (ED) of the Texas Commission on Environmental Quality (TCEQ or commission) is issuing a notice of intent to delete the site from its proposed-for-listing status on the state registry. The state registry is the list of state Superfund sites which may constitute an imminent and substantial endangerment to public health and safety or the environment due to a release or threatened release of hazardous substances into the environment. The commission is proposing this deletion because it has received an application for the site to be placed in the Voluntary Cleanup Program. Final deletion of the site from the Superfund registry will be contingent upon acceptance of the application to the Voluntary Cleanup Program, pursuant to 30 TAC §335.344(c)(5).

The site, including all land, structures, appurtenances, and other improvements is approximately 28 acres located at 1722 County Road 573 (Alloy Road), northwest of Iowa Colony in Brazoria County, Texas. The site also includes any areas where hazardous substances have come to be located as a result, either directly or indirectly, of releases of hazardous substances from the site.

The approximately 28-acre site consists of two tracts of land divided by County Road 573. The north tract consists of 16 acres of undeveloped land. The 12-acre tract of land south of County Road 573 was formerly used as a wastewater disposal and oil recovery facility from 1971 to 1983. The waste oils were received from industrial plants and service stations.

Site operations primarily involved the use of five surface impoundments for the separation of waste brought to the site. Upon entering the facility, tank trucks were unloaded into Pond 1. This pond served as the primary site for the separation of oils and wastewater. After separation, the oil was pumped off to one of the aboveground storage tanks (ASTs) and the wastewater was pumped through a series of two more ponds (Ponds 2 and 3) in which additional gravity separation occurred. Separated oil from each of these ponds was pumped into the aboveground tanks. The fourth surface impoundment was an "L" shaped waste management unit identified as the Sludge Pond (Pond 4). This pond was used to store oily wastes that were too thick to use as road oil. The Evaporation Pond (Pond 5) was the last and largest holding pond in the series of ponds at the site. After entering this pond, the wastewater was evaporated using a spray system. An impoundment was also constructed during site operations to temporarily store wastewater while the Evaporation Pond was under construction. The Temporary Holding Pond exists as a shallow depression on the west side of the site.

The only other structures remaining on the south tract are three ASTs, three underground storage tanks (USTs), and remnants of a metal pump house/storage shed. The ASTs are located along the northern portion of the former operations area adjacent to County Road 573. Two of the ASTs are estimated to be 20,000 gallons in size, and the third is estimated to be 12,000 gallons. These tanks are now empty. The USTs consist of buried railroad cars used to store various wastes. The total capacity of each UST is approximately 10,000 gallons. The tops of these tanks are exposed, and large openings have been cut in the tops of the tanks; however, no waste remains within the USTs.

In May 2009, the Force Road Task Force applied for the Voluntary Cleanup Program to remediate the site. The Response Action Plan, dated March 2009, proposes to remediate the former wastewater disposal and oil recovery facility to be protective of ecological receptors and residential land use in accordance with Remedy Standard B of the Texas Risk Reduction Program. The proposed response actions include: (1) removing and recycling the three empty ASTs; (2) abandoning the three empty USTs in place in accordance with 30 TAC §334.55(c); (3) removing the pump house/storage shed by recycling the sheet metal and placing the other building materials in the area to be capped; (4) dewatering Ponds 1 - 5, and treating (onsite with activated carbon or similar media) the water to the applicable standards prior to discharging the water to a ditch or disposing the water offsite at a permitted facility; (5) excavating affected sediment from Pond 5 and placing it in Ponds 1 - 4; (6) in-situ stabilizing the waste and affected sediment in Ponds 1 - 4 (using lime, fly ash, Portland cement or similar stabilizing agents); (7) constructing an engineered cap over Ponds 1 - 4 and the soil protective concentration level exceedence (PCLE) zones adjacent to Ponds 1 - 4; (8) constructing a security fence to include the capped area and groundwater plume management zone (PMZ); (9) filing an institutional control for the engineered cap and groundwater PMZ; and (10) two years of quarterly groundwater monitoring to demonstrate that the PCLE zones remain stable or shrinking and will permanently remain within the groundwater PMZ. Proposed post-response action care activities include: (1) monitoring and maintenance of the engineered cap for 30 years; and (2) three years of semi-annual groundwater monitoring to confirm the PCLE zones are permanently contained in the PMZ and post-response action care monitoring of groundwater is no longer necessary in accordance with 30 TAC §350.33(i).

In accordance with 30 TAC §335.344(b), the commission will hold a public meeting to receive comment on this proposed deletion. This meeting will not be a contested case hearing within the meaning of Texas Government Code, Chapter 2001. The meeting will be held on Thursday, July 16, 2009, at 7:00 p.m. at Iowa Colony City Hall, 12003 County Road 65, Iowa Colony, Texas 77583.

All persons desiring to make comments regarding the proposed deletion of the site may do so prior to or at the public meeting. All comments submitted **prior** to the public meeting must be received by 5:00 p.m. on July 15, 2009, and should be sent in writing to Mark Arthur, P.G., Project Manager, Texas Commission on Environmental Quality, Remediation Division, MC 136, P.O. Box 13087, Austin, Texas 78711-3087 (or by facsimile at (512) 239-2450). The public comment period for this action will end at the close of the public meeting of July 16, 2009.

A portion of the record for the site including documents pertinent to the ED's proposed deletion is available for review during regular business hours at the Alvin Branch Library, 65 South Gordon Street, Alvin, Texas 77511, (281) 388-4302. The complete public file may be obtained during regular business hours at the commission's Records Management Center, Building E, First Floor, Records Customer Service, MC 199, 12100 Park 35 Circle, Austin, Texas 78753, (800) 633-9363 or (512) 239-2920. Fees are charged for photocopying file information. Parking for persons with disabilities is available on the east side of Building D, convenient to access ramps that are between Buildings D and E. Persons with disabilities who have special communication or other accommodation needs who are planning to attend the meeting should contact the agency at (800) 633-9363 or (512) 239-1352. Requests should be made as far in advance as possible.

For further information about the public meeting, please call Kelly Peavler, Community Relations Liaison, at (800) 633-9363.

TRD-200902184

Kathleen C. Decker

Director, Litigation Division

Texas Commission on Environmental Quality

Filed: June 2, 2009



### Notice of Opportunity to Comment on Agreed Orders 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 Agreed Orders (AOs) in accordance with Texas Water Code (TWC), §7.075. Section 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. Section 7.075 requires that notice of 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 **July 13, 2009**. Section 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 A, 3rd Floor, Austin, Texas 78753, (512) 239-3400 and at the applicable regional office listed as follows. Written comments about an AO should be sent to the attorney designated for the AO 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 July 13, 2009**. Comments may also be sent by facsimile machine to the attorney at

(512) 239-3434. The designated attorney is available to discuss the AO and/or the comment procedure at the listed phone number; however, §7.075 provides that comments on an AO shall be submitted to the commission in **writing**.

(1) COMPANY: B&M Marshall Road, Ltd.; DOCKET NUMBER: 2008-0583-EAQ-E; TCEQ ID NUMBER: RN105468375; LOCATION: United States Highway 281 North and Marshall Road, San Antonio, Bexar County; TYPE OF FACILITY: commercial development property; RULES VIOLATED: 30 TAC §213.4(a)(1), by failing to obtain approval of a Water Pollution Abatement Plan prior to beginning a regulated activity over the Edwards Aquifer Recharge Zone; PENALTY: \$25,000; STAFF ATTORNEY: Xavier Guerra, Litigation Division, MC R-13, (210) 403-4016; REGIONAL OFFICE: San Antonio Regional Office, 14250 Judson Road, San Antonio, Texas 78233-4480, (210) 490-3096.

(2) COMPANY: Citgo Refining and Chemicals, L.P.; DOCKET NUMBER: 2004-1279-AIR-E; TCEQ ID NUMBER: RN102555166; LOCATION: 1802 Nueces Bay Boulevard, Corpus Christi, Nueces County; TYPE OF FACILITY: petroleum refinery; RULES VIOLATED: 30 TAC §§111.111(a)(1)(C), 116.115(c), 101.20(1) and (3); Permit Number 3390A and Permit Number 9604A, SC Numbers 1, 8, 11, and 15; THSC, §382.085(b), and 40 Code of Federal Regulations (CFR) §60.102 and §60.103(a), by failing to prevent unauthorized emissions from the Number 2 FCCU on October 28, 2003; PENALTY: \$10,000; STAFF ATTORNEY: Jennifer Cook, Litigation Division, MC 175, (512) 239-1873; REGIONAL OFFICE: Austin Regional Office, 2800 South Interstate Highway 35, Suite 100, Austin, Texas 78704-5712, (512) 339-2929.

(3) COMPANY: Citgo Refining and Chemicals Company, L.P.; DOCKET NUMBER: 2002-0290-AIR-E; TCEQ ID NUMBER: RN102555166 and 100238799; LOCATION: 1802 Nueces Bay Boulevard (the East Plant) and 7350 Interstate Highway 37 (the West Plant), Corpus Christi, Nueces County; TYPE OF FACILITY: petroleum refinery; RULES VIOLATED: 30 TAC §101.6(a)(1) and Texas Health and Safety Code (THSC), §382.085(b), by failing to notify the TCEQ's regional office within 24 hours after the discovery of two upset events, both of which occurred on August 8, 2001; 30 TAC §116.115(b)(2)(G) and (c), TCEQ Permit Number 2704A, General Provision Number 1, TCEQ Permit Number 2703A, Special Provision Number 1, TCEQ Permit Number 3390A, Special Provision Number 1, and THSC, §382.085(b), by failing to obtain regulatory authority or meet the demonstration requirements of 30 TAC §101.111 for upset emissions resulting from two separate events which occurred on August 8, 2001; 30 TAC §116.115(b)(2)(F), Permit Number 3123A, SC Number 1, and THSC, §382.085(b), by failing to demonstrate compliance with the Maximum Allowable Emission Rate of Permit Number 3123A during a stack test performed at the East Plant, 30 TAC §116.115(c), Permit Number 46641, SC Number 1, and THSC, §382.085(b), by failing to prevent an unauthorized emission event which occurred May 26, 2004, at the Terminal Tank Farm of the East Plant; 30 TAC §116.115(b)(2)(E), and THSC, §382.085(b), by failing to maintain records containing the information and data sufficient to demonstrate compliance with the permit, including production records; 30 TAC §116.115(c), Permit Number 8778A, SC Number 30, and THSC, §382.085(b), by failing to maintain the Tail Gas Incinerator firebox exit temperature at a minimum of 1,475 degrees Fahrenheit; 30 TAC §116.115(c), Permit Number 7741A, SC Number 9, and THSC, §382.085(b), by failing to meet the fugitive emission monitoring requirements as specified in the permit; 30 TAC §113.340, THSC, §382.085(b), and 40 CFR §63.654(f)(6), by failing to submit the Notification of Compliance Status Report for maximum available control technology (MACT) Tank Numbers 6011, 6012, and 6015; 30 TAC §101.20 and §113.340, THSC, §382.085(b), and 40 CFR §§60.487(a),

60.592(e), and 63.648(a), by failing to submit the MACT-Subpart CC volatile organic compound semi-annual report for the first half of 2003; 30 TAC §116.115(c), Permit Number 7741A, SC Number 8F and Permit Number 8778A, SC Number 12F, THSC, §382.085(b), and 40 CFR §60.485(b)(1), by failing to properly calibrate the gas analyzer; PENALTY: \$68,640; Supplemental Environment Project offset amount of \$34,320 applied to Texas Parent Teachers Association d/b/a Texas PTA Clean School Buses; STAFF ATTORNEY: Jennifer Cook, Litigation Division, MC 175, (512) 239-1873; REGIONAL OFFICE: Austin Regional Office, 2800 South Interstate Highway 35, Suite 100, Austin, Texas 78704-5712, (512) 339-2929.

(4) COMPANY: Diamond Shamrock Refining Company, L.P.; DOCKET NUMBER: 2008-0384-AIR-E; TCEQ ID NUMBER: RN100210517; LOCATION: 6701 Farm-to-Market 119, Moore County; TYPE OF FACILITY: petroleum refinery; RULES VIOLATED: 30 TAC §101.201(b)(1)(D), (G), (H), and (J) and THSC, §382.085(b), by failing to include the common name of the facilities, compound descriptive type and estimated quantities of all compounds released, and the cause of the emissions event (Incident Number 96231) in the final emissions event report; 30 TAC §101.20(3) and §116.715(a), THSC, §382.085(b), and Flexible Permit Number 9708/PST-TX-861M2, Special Condition (SC) Number 2, by failing to prevent unauthorized emissions; 30 TAC §101.201(b)(1)(G) and THSC, §382.085(b), by failing to identify the compound descriptive type of all compounds released during an emissions event (Incident Number 97187) on the final emissions event; 30 TAC §101.20(3) and §116.715(a), THSC, §382.085(b), and Flexible Permit Number 9708/PSD-TX-861M2, SC Number 2, by failing to prevent unauthorized emissions; 30 TAC §101.20(3) and §116.715(a), THSC, §382.085(b), and Flexible Permit Number 9708/PSD-TX-861M2, SC Number 10, by failing to operate combustion sources with fuel at or below the maximum hydrogen sulfide concentration limit of 0.10 grain per dry standard cubic feet (162 parts per million), resulting in unauthorized emissions sulfur dioxide; 30 TAC §101.20(3) and §116.715(a), THSC, §382.085(b), and Flexible Permit Number 9708/PSD-TX-861M2, SC Number 16, by failing to operate Sulfur Recovery Unit (SRU) 1 with a minimum firebox temperature of 1,200 degrees Fahrenheit on September 22 and October 19, 2007, and SRU 2 on November 2, 2007; 30 TAC §101.20(3) and §116.715(a), THSC, §382.085(b), and Flexible Permit Number 9708/PSD-TX-861M2, SC Number 25, by failing to operate the FCCU stack at or below the maximum opacity limit of 15% 17 times in June 2007, 15 times in August 2007, twice in September 2007, ten times in October 2007, and once in November 2007; 30 TAC §101.20(3) and §116.715(a), THSC, §382.085(b), and Flexible Permit Number 9708/PSD-TX-861M2, SC Number 9.B., by failing to operate flares with a pilot flame present at all times; and 30 TAC §101.20(3) and §116.715(a), THSC, §382.085(b), and Flexible Permit Number 9708/PSD-TX-861M2, SC Number 9.C., by failing to operate the FCCU Flare with no visible emissions on September 7, 9, and 10, 2007; PENALTY: \$93,236, Supplemental Environmental Project offset amount of \$46,618 applied to Texas Association of Resource Conservation and Development Areas, Inc., Abandoned Tire Cleanups; STAFF ATTORNEY: Anna Treadwell, Litigation Division, MC 175, (512) 239-0974; REGIONAL OFFICE: Amarillo Regional Office, 3918 Canyon Drive, Amarillo, Texas 79109-4933, (806) 353-9251.

(5) COMPANY: Glazer's Wholesale Drug Company, Inc.; DOCKET NUMBER: 2009-0026-PST-E; TCEQ ID NUMBER: RN102456753; LOCATION: 101 45th Street, Corpus Christi, Nueces County; TYPE OF FACILITY: wholesale fleet refueling facility; RULES VIOLATED: 30 TAC §334.49(c)(2)(C) and (4) and TWC, §26.3475(d), by failing to inspect the impressed current cathodic protection system at least once every 60 days to ensure the rectifier and other components are operat-

ing properly and by failing to test the corrosion protection system once every three years; 30 TAC §334.49(c)(4), and TWC, §26.3475(d), by failing to test the corrosion protection system once every three years; and 30 TAC §334.50(b)(1)(A) and TWC, §26.3475(c)(1), by failing to ensure that all underground storage tanks are monitored in a manner which will detect a release at a frequency of at least once every month (not to exceed 35 days between each monitoring); PENALTY: \$11,159; STAFF ATTORNEY: Michael Fishburn, Litigation Division, MC 175, (512) 239-0635; REGIONAL OFFICE: Corpus Christi Regional Office, 6300 Ocean Drive, Suite 1200, Corpus Christi, Texas 78412-5839, (361) 825-3100.

(6) COMPANY: Kenneth Campbell; DOCKET NUMBER: 2008-0614-MLM-E; TCEQ ID NUMBER: RN105232722; LOCATION: intersection of Loop 500 and State Highway 87, near Center, Shelby County; TYPE OF FACILITY: municipal solid waste; RULES VIOLATED: 30 TAC §111.201 and THSC, §382.085(b), by failing to comply with the prohibition on outdoor burning; and 30 TAC §330.15, by failing to properly dispose of municipal solid waste at an authorized facility; PENALTY: \$2,378; STAFF ATTORNEY: Benjamin Thompson, Litigation Division, MC 175, (512) 239-1297; REGIONAL OFFICE: Beaumont Regional Office, 3870 Eastex Freeway, Beaumont, Texas 77703-1830, (409) 898-3838.

TRD-200902186

Kathleen C. Decker

Director, Litigation Division

Texas Commission on Environmental Quality

Filed: June 2, 2009



#### Notice of Opportunity to Comment on Default Orders 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 Orders (DOs). The commission staff proposes a DO when the staff has sent an executive director's preliminary report and petition (EDPRP) to an entity outlining the alleged violations; the proposed penalty; and 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 **July 13, 2009**. 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 July 13, 2009**. Comments may also be sent by facsimile machine to the attorney at

(512) 239-3434. The commission's attorneys are available to discuss the DOs and/or the comment procedure at the listed phone numbers; however, §7.075 provides that comments on the DOs shall be submitted to the commission in **writing**.

(1) COMPANY: Grupo Victoria Corporation dba Los Tejanos Meat Market; DOCKET NUMBER: 2008-1071-PST-E; TCEQ ID NUMBER: RN101433282; LOCATION: 4401 McPherson Road, Laredo, Webb County; TYPE OF FACILITY: convenience store with retail sales of gasoline; RULES VIOLATED: 30 TAC §334.50(a)(1)(A), (d)(1)(B)(ii), (iii)(I) and §335.50(b)(2)(A)(i)(III) and TWC, §26.3475(a) and (c)(1), by failing to provide a method of release detection capable of detecting a release from any portion of the underground storage tank (USTs) system which contained regulated substances, by failing to test the line leak detectors at least once per year for performance and operational reliability, by failing to conduct reconciliation of detailed inventory control records at least once each month, sufficiently accurate to detect a release as small as the sum of 1.0% of the total substance flow-through from the month plus 130 gallons, and by failing to record inventory volume measurement for regulated substance inputs, withdrawals, and the amount remaining in the tank each operating day; and 30 TAC §334.48(c), by failing to conduct effective manual or automatic inventory control procedures for all USTs involved in the retail sale of petroleum substances used as a motor fuel. PENALTY: \$6,096; STAFF ATTORNEY: Tammy Mitchell, Litigation Division, MC 175, (512) 239-0736; REGIONAL OFFICE: Laredo Regional Office, 707 East Calton Road, Suite 304, Laredo, Texas 78041-3887, (956) 791-6611.

TRD-200902187

Kathleen C. Decker

Director, Litigation Division

Texas Commission on Environmental Quality

Filed: June 2, 2009



### Notice of Water Quality Applications

The following notices were issued during the period of May 21, 2009 through May 29, 2009.

The following require the applicants to publish notice in a newspaper. Public comments, requests for public meetings, or requests for a contested case hearing may be submitted to the Office of the Chief Clerk, Mail Code 105, P.O. Box 13087, Austin, Texas 78711-3087, WITHIN 30 DAYS OF THE DATE OF NEWSPAPER PUBLICATION OF THE NOTICE.

#### INFORMATION SECTION

CITY OF GANADO has applied for a renewal of TPDES Permit No. WQ0010010001, which authorizes the discharge of treated domestic wastewater at a daily average flow not to exceed 350,000 gallons per day. The facility is located approximately 800 feet southwest of the City of Ganado limits and approximately 1,900 feet west of the intersection of Baker Street and State Highway 172, at the end of Baker Street in Jackson County, Texas.

THE CITY OF AUSTIN has applied for a renewal with changes of TPDES Permit No. WQ0011459001, to authorize the discharge of treated domestic wastewater at a daily average flow not to exceed 990,000 gallons per day. The existing permit authorizes the discharge of treated domestic wastewater at an annual average flow not to exceed 1,300,000 gallons per day. The facility is located 1,700 feet southwest of the intersection of U.S. Highway 183 and Farm-to-Market Road 620 and approximately 5,800 feet northwest of the intersection of U.S. Highway 183 and Anderson Mill Road in Williamson County, Texas.

CREEK PARK CORPORATION has applied for a renewal of TPDES Permit No. WQ0014556001, which authorizes the discharge of treated domestic wastewater at a daily average flow not to exceed 6,100 gallons per day. The facility is located 0.75 mile south of the intersection of Farm-to-Market Road 917 and Farm-to-Market Road 1902, approximately 1/4 mile west of the intersection of Pleasant Oaks Road and County Road 1022 and approximately 2 miles east-southeast of the City of Joshua in Johnson County, Texas.

NALCO COMPANY which operates Nalco Company WWTP, a plant that produces anti-foaming agents used in the paper industry, has applied for a minor amendment of TPDES Permit No. WQ0002955000, authorizing removal of Total Suspended Solids (TSS) from the effluent limitations page of the permit, and simultaneously replacing it with Temperature. During the previous permit action, TSS was inadvertently listed on the effluent limitations page instead of Temperature. The existing permit authorizes the discharge of non-contact cooling water at a daily average flow not to exceed 40,000 gallons per day via Outfall 001. The facility is located at 3901 Terry Street, one-third of a mile east of Loop 151 (U.S. Highway 59) and two-thirds of a mile south of U.S. Highway 67 in the City of Texarkana, Bowie County, Texas 75501.

PHILLIPS ELECTRONICS NORTH AMERICA CORPORATION which operates a groundwater treatment unit at a former electronics manufacturing facility, has applied to the Texas Commission on Environmental Quality (TCEQ) for a renewal of TPDES Permit No. WQ0003835000, which authorizes the discharge of treated groundwater at a daily average flow not to exceed 28,800 gallons per day via Outfall 001. The facility is located on Harvey Road approximately 1.5 miles south of U.S. Highway 180 and approximately 0.4 miles east of Farm-to-Market Road 1195 in the City of Mineral Wells, Parker County, Texas.

WEBB COUNTY which operates Webb County Colorado Acres Water Plant, has applied for a renewal of TCEQ Permit No. WQ0004184000, which authorizes the disposal of reject water from the reverse osmosis treatment plant at a daily average flow not exceed 28,800 gallons per day via evaporation. The draft permit authorizes the disposal of reject water from the reverse osmosis treatment plant at a daily average flow not to exceed 9,500 gallons per day via evaporation. This permit will not authorize a discharge of pollutants into water in the State. The facility and land application site are located North of State Highway 59, approximately 15 miles east of the City of Laredo, Webb County, Texas, Webb County, Texas.

NAVARRO GENERATING LLC which proposes to operate Navarro Energy Center, a natural gas fired combined cycle electric generating facility, has applied for a new permit, proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0004870000, to authorize the discharge of cooling tower blowdown and low volume waste sources at a daily average flow not to exceed 1,430,000 gallons per day via Outfall 001, and storm water on an intermittent and flow variable basis via Outfall 002. The facility is located at the intersection of Farm-to-Market Road 1394 and Southwest County Road 2100, approximately 3.3 miles southwest of Richland, Navarro County, Texas.

CITY OF RALLS has applied for a renewal of TCEQ Permit No. WQ0010116001, which authorizes the disposal of treated domestic wastewater at a daily average flow not to exceed 259,000 gallons per day via irrigation of 255 acres of restricted access land. This permit will not authorize a discharge of pollutants into waters in the State. The wastewater treatment facility and disposal site are located near the intersection of Pecan Street and First Street; 3,000 feet southeast of the intersection of U.S. Highway 82 and State Highway 207 in Crosby County, Texas.



CITY OF WEST COLUMBIA has applied to the Texas Commission on Environmental Quality (TCEQ) for a renewal of TPDES Permit No. WQ0010312001, which authorizes the discharge of treated domestic wastewater at an annual average flow not to exceed 1,600,000 gallons per day. The facility is located on Fourth Street, approximately 1.7 miles east of the intersection of State Highway 35 (Business) and State Highway 36 in Brazoria County, Texas.

CITY OF BALLINGER has applied for a renewal of TCEQ Permit No. WQ0010325003, which authorizes the disposal of treated domestic wastewater at a daily average flow not to exceed 375,000 gallons per day via surface irrigation of 160 acres of non-public access agricultural land. This permit will not authorize a discharge of pollutants into water in the State. The wastewater treatment facility and disposal site are located 3,000 feet southeast of the crossing of U.S. Highway 67 and Elm Creek and 4,000 feet east of the intersection of U.S. Highway 67 and 83 near the courthouse in the City of Ballinger in Runnels County, Texas.

CITY OF OLTON has applied for a renewal of TCEQ Permit No. WQ0010357001, which authorizes the disposal of treated domestic wastewater at a daily average flow not to exceed 200,000 gallons per day via surface irrigation of 49.8 acres of non-public access agricultural land. This permit will not authorize a discharge of pollutants into waters in the State. The wastewater treatment facility and disposal site are located approximately one mile south of the intersection of U.S. Highway 70 and Farm-to-Market Road 168, and 1/4 mile east of Farm-to-Market Road 168 in Lamb County, Texas.

CITY OF BELLEVUE has applied for a new permit, proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0011235003, to authorize the discharge of treated domestic wastewater at a daily average flow not to exceed 33,000 gallons per day. The facility was previously permitted under TPDES Permit No. WQ0011235001 which expired December 1, 2006. The facility is located due north of Bellevue, approximately 900 feet east of Farm-to-Market Road 1288 and 0.35 mile north of the intersection of U.S. Highway 287 and Farm-to-Market Road 1288 in Clay County, Texas.

PRAIRIE VIEW A&M UNIVERSITY has applied for a renewal of TPDES Permit No. WQ0011275002, which authorizes the discharge of treated domestic wastewater at an annual average flow not to exceed 2,000,000 gallons per day. The facility is located on the northwest section of Prairie View A&M Campus, approximately 500 feet east of Farm-to-Market Road 1098 and 1.0 mile north of U.S. Highway 290 in Waller County, Texas.

MANITOU LTD INCORPORATED has applied for a renewal of TPDES Permit No. WQ0012015001, which authorizes the discharge of treated domestic wastewater at a daily average flow not to exceed 240,000 gallons per day. The facility is located approximately 1 mile southwest of the intersection of North Graham Road and Farm-to-Market Road 2145 and approximately 2 miles south of the intersection of Farm-to-Market Road 2818 and Farm-to-Market Road 2154 in Brazos County, Texas.

WALL INDEPENDENT SCHOOL DISTRICT has applied for a major amendment to Permit No. WQ0013421001, to authorize the disposal of treated domestic wastewater at a daily average flow not to exceed 18,000 gallons per day via surface irrigation of 3.5 acres of non-public access agricultural land. The current permit authorizes the disposal of treated domestic wastewater at a daily average flow not to exceed 18,000 gallons per day via subsurface area drip dispersal system irrigation of 4.2 acres of public access land. This permit will not authorize a discharge of pollutants into waters in the State. The wastewater treatment facility and disposal site are located on the south side of the Wall

Independent School District campus, approximately 0.5 mile south of the intersection of Loop 570 and Hawk Avenue, in the community of Wall in Tom Green County, Texas.

HAYS COUNTY DEVELOPMENT DISTRICT NO. 1 has applied for a renewal of TCEQ Permit No. WQ0014208001, which authorizes the disposal of treated domestic wastewater at a daily average flow not to exceed 300,000 gallons per day via surface irrigation on 120 acres of golf course. This permit will not authorize a discharge of pollutants into waters in the State. The wastewater treatment facility and disposal site will be located approximately 1,000 feet west of Ranch Road 12 and approximately 1.5 miles south of the intersection of U.S. Highway 290 and Ranch Road 12 in Hays County, Texas.

METHODIST CHILDRENS HOME has applied for a new permit, proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0014464002, to authorize the discharge of treated domestic wastewater at a daily average flow not to exceed 7,500 gallons per day. This facility was previously authorized to discharge under (TPDES) Permit No. WQ0014464001, which expired December 1, 2008. The facility is located 3.17 miles southwest of the intersection of U.S. Highway 84 and Loop 340 in McLennan County, Texas.

HARRIS COUNTY MUNICIPAL UTILITY DISTRICT NO. 459 has applied for a renewal of TPDES Permit No. WQ0014554001, which authorizes the discharge of treated domestic wastewater at a daily average flow not to exceed 180,000 gallons per day. The facility is located approximately one mile southeast of the intersection of Interstate 10 and Sjolander Road in Harris County, Texas.

AQUA WATER SUPPLY CORPORATION has applied for a renewal of TPDES Permit No. WQ0014607001, which authorizes the discharge of treated domestic wastewater at a daily average flow not to exceed 75,000 gallons per day. The facility is located on an access road off Fagerquist Road, approximately 0.8 mile south of the intersection of Wolf Lane and Pearce Lane in Bastrop County, Texas.

CITY OF EDCOUCH has applied for a new permit, proposed Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0014919001, to authorize the discharge of treated domestic wastewater at a daily average flow not to exceed 310,000 gallons per day. The facility was previously permitted under TPDES Permit No. WQ0013916001 which expired July 1, 2005. The facility is located approximately 0.5 mile northeast of the intersection of State Highway 107 and Farm-to-Market Road 1015 in Hidalgo County, Texas.

If you need more information about these permit applications or the permitting process, please call the TCEQ Office of Public Assistance, Toll Free, at 1-800-687-4040. General information about the TCEQ can be found at our web site at [www.tceq.state.tx.us](http://www.tceq.state.tx.us). Si desea información en Español, puede llamar al 1-800-687-4040.

TRD-200902201

LaDonna Castañuela

Chief Clerk

Texas Commission on Environmental Quality

Filed: June 3, 2009

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**Texas Ethics Commission**

List of Late Filers

Listed below are the names of filers from the Texas Ethics Commission who did not file reports, or failed to pay penalty fines for late reports in reference to the listed filing deadline. If you have any questions, you may contact Robbie Douglas at (512) 463-5800 or (800) 325-8506.

**Deadline: 30-day Pre-election Report due October 6, 2008**

William A. White, 18 Nursery Road, The Woodlands, Texas 77380-4001

**Deadline: 8-day Pre-election Report due October 27, 2008**

William A. White, 18 Nursery Road, The Woodlands, Texas 77380-4001

**Deadline: Semiannual Report due January 15, 2009 for Candidates and Officeholders**

Frank D. Brown, 307 North 8th St., Alpine, Texas 78930-4503

Neil L. Durrance, 1108 N. Locust St., Denton, Texas 76201-2958

**Deadline: 30-day Pre-election Report due April 9, 2009**

Jason D. Fife, Republican Party of Waller County (CEC), P.O. Box 697, Pattison, Texas 77466

**Deadline: Monthly Report due April 6, 2009 for Committees**

Cindy P. Milrany, Freese and Nichols PAC, 4055 International Plaza, Ste. 200, Fort Worth, Texas 76109

**Deadline: Lobby Activities Report due September 10, 2008**

Douglas Dunsavage, 8200 Brookriver Dr., Ste. N-100, Dallas, Texas 75247

**Deadline: Lobby Activities Report due December 10, 2008**

Jessica Balladares Bennett, 12007 Research Blvd., Ste. 201, Austin, Texas 78759

**Deadline: Lobby Activities Report due January 12, 2009**

Kym Nicole Olson, 1001 Louisiana St., Houston, Texas 77002

**Deadline: Lobby Activities Report due February 10, 2009**

Rochonda Farmer-Neal, Baylor University, One Bear Place #97133, Waco, Texas 76798

Jana L. Hixson, Baylor University, One Bear Place #97133, Waco, Texas 76798

**Deadline: Lobby Activities Report due March 10, 2009**

Frank Jackson, 701 Brazos #500, Austin, Texas 78701

**Deadline: Lobby Activities Report due April 10, 2009**

Thomas Rene Aguillon, 1900 Blue Crest Ln., San Antonio, Texas 78247

Rochonda Farmer-Neal, Baylor University, One Bear Place #97133, Waco, Texas 76798

Amy Fitzgerald, 5604 Southwest Pkwy. #2613, Austin, Texas 78735

L. Alan Gray, 1212 Guadalupe #1003, Austin, Texas 78701

Jana L. Hixson, Baylor University, One Bear Place #97133, Waco, Texas 76798

**Deadline: Personal Financial Statement due October 30, 2008**

Stephanie E. Simmons, 3918 Emerald Lake Dr., Missouri City, Texas 77459

TRD-200902058

David Reisman

Executive Director

Texas Ethics Commission

Filed: May 28, 2009



## Texas Facilities Commission

### Request for Proposals #303-9-11951

The Texas Facilities Commission (TFC), on behalf of the Texas Health and Human Services Commission, and the Department of Assistive and Rehabilitative Services, announces the issuance of Request for Proposals (RFP) #303-9-11951. TFC seeks a five or ten year lease of approximately 16,754 square feet of office space in Round Rock, Williamson County, Texas.

The deadline for questions is June 22, 2009 and the deadline for proposals is July 6, 2009 at 3:00 p.m. The award date is August 19, 2009. TFC reserves the right to accept or reject any or all proposals submitted. TFC is under no legal or other obligation to execute a lease on the basis of this notice or the distribution of an RFP. Neither this notice nor the RFP commits TFC to pay for any costs incurred prior to the award of a grant.

Parties interested in submitting a proposal may obtain information by contacting TFC Purchaser Sandy Williams at (512) 475-0453. A copy of the RFP may be downloaded from the Electronic State Business Daily at [http://esbd.cpa.state.tx.us/bid\\_show.cfm?bidid=82899](http://esbd.cpa.state.tx.us/bid_show.cfm?bidid=82899).

TRD-200902214

Kay Molina

General Counsel

Texas Facilities Commission

Filed: June 3, 2009



## General Land Office

Public Notice of Damage Assessment Restoration Plan - Galveston Bay Mystery Spills (Natural Resource Trustee Program)

Notice of Intent to Conduct Restoration Planning Pursuant to the Oil Pollution Act of 1990 and 15 C.F.R. §990.44

**Summary.** Under the Oil Pollution Act of 1990 (OPA), and in accordance with the provisions of relevant regulations at 15 C.F.R. §990.42 and §990.44, the Texas Natural Resource Trustees (Texas Commission on Environmental Quality, Texas Parks and Wildlife Department, and Texas General Land Office) are proceeding with a Natural Resource Damage Assessment (NRDA), which shall include injury assessment and restoration planning for three Galveston Bay Mystery Spills (Spills) which occurred October 11, 1999, October 14, 2000, and December 18, 2004. The purpose of OPA is to make the environment and public whole for injuries to natural resources and resource services resulting from an incident involving a discharge of oil. The Trustees submitted a claim for past and future natural resource damage assessment costs associated with 13 Galveston Bay area spills to the U.S. Coast Guard National Pollution Funds Center (NPFC) on November 22, 2006. The NPFC ultimately determined that costs for three of the major spills are compensable. The NRDA will identify and quantify the nature and extent (both temporal and spatial) of injuries to natural resources and resource services arising out of the Spills and develop plans for the restoration, replacement, or rehabilitation of those injured resources, or the acquisition of equivalent resources or resource services. The assessment will be conducted pursuant to the regulations for NRDA, as contained in 15 C.F.R. Part 990, and in accordance with the assessment procedures and overall approach specified by the NPFC in the claims award letter of August 18, 2008. The NRDA will address natural resources and resource services in Galveston Bay for injuries attributable to the Spills that have been or can be determined.

**October 1999 Oil Spill, Trinity Bay.** On October 11, 1999, a shrimper discovered a leaking pipeline in Trinity Bay, three miles south of Beach City, Texas. The pipeline was leaking in three different places, creating an oil slick 1 mile x 2 miles in the open waters of the bay. Field investigation determined the 2-inch pipeline to be abandoned, with the bay end of the line not connected to any of the wells in the bay and the shore end of the pipeline also not connected to an existing pipeline. The abandoned pipeline was sealed at both ends and the broken section was removed by crane. The spill amount was estimated to be 3,150 gallons, with none of the spilled amount recovered. Subsequent investigation was unable to identify a responsible party.

**October 14, 2000 Naptha Spill, Houston Ship Channel.** On October 14, 2000, approximately four barrels of Naptha were spilled from the Manchester Dock #3 area of the Houston Ship Channel. The spill created a 0.5 mile by 300-yard sheen resulting in the oiling of five birds and approximately 1500 feet of channel rock/rip/rap. The birds were cleaned, but the rock/rip/rap was considered uncleanable. One hundred and sixty-eight gallons were spilled and an estimated 147 gallons were recovered. No responsible party was identified for this incident.

**December 18, 2004 Crude Oil Spill, Highland Bayou.** Because of corrosion, an abandoned tank battery near Highway 6 in Hitchcock, Texas released the entire contents of a tank into the surrounding marsh and Highland Bayou. An estimated 9,640 gallons of crude oil was released. Most of the spill was recovered, however the surrounding marsh was oiled, as well as several birds. Multiple potentially responsible parties were identified, but none accepted responsibility.

**Responsibilities of the Trustees and the Oil Spill Liability Trust Fund.** Multiple natural resources were exposed to oil from these Spills and experienced injuries. Documented damage to marsh areas, other shoreline areas, shrimp, and birds occurred. Pre-assessment modeling has also demonstrated that significant numbers of waterfowl and seabirds beyond those observed were probably impacted due to the size of the spills. The Trustees are responsible for assessing damages to natural resources under their trusteeship that resulted from the Spills, developing a plan for the restoration of injured resources, and pursuing funding from responsible parties. Since no responsible parties were found, the Trustees requested funding for restoration plan implementation from the Oil Spill Liability Trust Fund (OSLTF) administered by the U.S. Coast Guard National Pollution Funds Center. The Trustees selected the Texas General Land Office as the Lead Administrative Trustee (LAT) to coordinate the NRDA for these spills.

The Trustees submitted a claim for past and future natural resource damage assessment costs associated with 13 Galveston Bay area spills to the NPFC on November 22, 2006. The NPFC ultimately determined August 18, 2008 that costs for three of the major spills are compensable. Additional information on the NPFC, OSLTF, and the oil spill claim process can be obtained from the NPFC website at <http://www.uscg.mil/hq.npfc/>.

#### **Trustee Determinations.**

1. Jurisdiction. The Trustees have determined pursuant to 15 C.F.R. §990.41 that they have jurisdiction under OPA to pursue restoration for the Spills. Specifically:
  - a. Spills into the Houston Ship Channel, Trinity Bay, and Highland Bayou were discharges into or upon navigable waters or adjoining shorelines.
  - b. The spills were not permitted under federal, state, or local law.
  - c. The spills were not from a public vessel.
  - d. The spills did result or may have resulted in injuries to natural resources under the trusteeship of the Texas Trustees.

2. Determination to Conduct Restoration Planning. The Trustees have determined pursuant to 15 C.F.R. §990.42 that the necessary conditions prerequisite to restoration planning have been met. Specifically:

- a. Injuries to natural resources have resulted, or are likely to result from the Spills.
- b. Response actions have not adequately addressed the injuries resulting from the Spills.
- c. Feasible primary and/or compensatory restoration actions exist to address the potential injuries.

**Potential Resource Injuries and Restoration Actions.** The November 22, 2006 damage assessment claim outlined injuries arising out of the three spills including, but is not limited to the following:

1. October 1999 Oil Spill, Trinity Bay. Oiling and mortality of waterfowl, seabirds, shorebirds, and wading birds.
2. October 14, 2000 Naptha Spill, Houston Ship Channel. Oiling and mortality of waterfowl and seabirds. Oil staining of vegetated shoreline and invertebrates on hard structures.
3. December 18, 2004 Crude Oil Spill, Highland Bayou. Oiling and mortality of waterfowl, seabirds, shorebirds, and wading birds. Dead shrimp. Oiling of surrounding marsh and shoreline of Highland Bayou.

The type and scale of potential restoration actions that are necessary and appropriate to address natural resource injuries attributable to the Spills will be determined as a part of the injury assessment and restoration planning that are the subjects of this Notice. Such actions might include, but are not limited to: replacement/restoration of, or increased protections for, habitats and/or biological resources of the types injured by the Spills. As required by OPA and pursuant to 15 C.F.R. §990.55, the planning of any restoration actions as part of the NRDA will be subject to public review and comment prior to the finalization of the Restoration Plan.

A full discussion and description of the potential assessment procedures to evaluate the injuries and define the appropriate type and scale of restoration for the injured natural resources and services may be found in the Trustee's assessment claim document entitled "2006 Galveston Bay Area Oil Spills Natural Resource Damage Assessment" (November 3, 2006). In summary, injuries resulting directly or indirectly from the Spills shall be determined and quantified through spill history file review, the use of oil spill fate and effects computer modeling, literature review, site visits, and interviews with witnesses. Restoration planning shall occur through surveys of available and appropriate projects to compensate for interim losses, or accelerate recovery, where feasible. Restoration projects will be sized (scaled) using a service-to-service scaling approach for lost biological resources.

**Administrative Record.** The Trustees have opened an Administrative Record (Record) in compliance with 15 C.F.R. §990.45. As restoration planning for the Spills proceeds, the Record will be periodically updated to include documents relied upon by the Trustees in making decisions pertaining to the injury assessment and restoration planning that are the subjects of this Notice. The Record is on file with the Natural Resource Trustee Program, Coastal Resources Program, Texas General Land Office. For access, please contact David Parmer at the address, phone number, or email listed below.

**Opportunity to Comment.** Pursuant to 15 C.F.R. §990.14 and §990.55, the Trustees will seek public involvement in restoration planning for the Spills through public review of, and comment on, this Notice of Intent (Notice), and the draft Damage Assessment and Restoration Plan (DARP), once it is completed. When the draft DARP is prepared, the public will be notified of its availability and

the opportunity to comment. Prior to completion of the draft DARP, the public is invited to submit any information or comments that may inform the injury assessment and restoration planning process. Written comments on this notice will be accepted 30 days from publication in the *Texas Register*.

Questions or comments concerning this Notice or the Record may be directed to: David Parmer, Natural Resource Trustee Program, Coastal Resources Program, Texas General Land Office, 1700 N. Congress Avenue, P.O. Box 12873, Austin, Texas 78711, (512) 936-7958, david.parmar@glo.state.tx.us.

TRD-200902192

Larry L. Laine

Chief Clerk, Deputy Land Commissioner

General Land Office

Filed: June 2, 2009



## Texas Health and Human Services Commission

### Notice of Public Hearing on Proposed Medicaid Payment Rates

**Hearing.** The Texas Health and Human Services Commission (HHSC) will conduct a public hearing on July 1, 2009, at 9:00 a.m. to receive public comment on rate increases for the Community Based Alternatives (CBA) waiver program operated by the Department of Aging and Disability Services (DADS). The hearing will be held in compliance with Human Resources Code §32.0282 and Texas Administrative Code (TAC) Title 1, §355.105(g), which require public notice and hearings on proposed Medicaid reimbursements. The public hearing will be held in the Lone Star Conference Room of the Health and Human Services Commission, Braker Center, Building H, located at 11209 Metric Boulevard, Austin, Texas. Entry is through Security at the main entrance of the building, which faces Metric Boulevard. Persons requiring Americans with Disability Act (ADA) accommodation or auxiliary aids or services should contact Meisha Scott by calling (512) 491-1445, at least 72 hours prior to the hearing so appropriate arrangements can be made.

**Proposal.** HHSC proposes to increase the rates for certain services provided under CBA. The proposed rates will be effective September 1, 2009, and were determined in accordance with the rate setting methodologies listed below under "Methodology and Justification."

**Methodology and Justification.** The proposed rates were determined in accordance with the rate setting methodologies codified at: §355.112, Attendant Compensation Rate Enhancement; §355.114, Consumer Directed Services Payment Option; proposed new §355.502, Reimbursement Methodology for Professional Services in Home and Community-Based Services Waivers; and proposed amended §355.503, Reimbursement Methodology for the Community-Based Alternatives Waiver and Assisted Living/Residential Care Programs.

The proposed amendments to §355.503 and the proposed new §355.502 will be published in the July 3, 2009, issue of the *Texas Register*. These proposed new rule and amendments to the rules will give HHSC the authority to combine allowable costs per unit of service for identical professional services from all DADS 1915(c) waiver programs into a single database for use in determining rates for these services. The proposed amendments to §355.505 also add a reimbursement methodology for day activity and health services (DAHS) and continued family services.

The proposed rates for CBA were subsequently adjusted in accordance with §355.101, Introduction, and §355.109, Adjusting Reimbursement When New Legislation, Regulations or Economic Factors Affect Costs.

These changes are being made in accordance with the 2010-11 General Appropriations Act (Article II, S.B. 1, 81st Legislature, Regular Session, 2009), which appropriated \$110,298,243 general revenue funds for the State Fiscal Year 2010-2011 biennium for Medicaid rate increases for DADS' community care programs.

**Briefing Package.** A briefing package describing the proposed payment rates will be available on June 17, 2009. Interested parties may obtain a copy of the briefing package prior to the hearing by contacting Meisha Scott by telephone at (512) 491-1445; by fax at (512) 491-1998; or by e-mail at meisha.scott@hhsc.state.tx.us. The briefing package also will be available at the public hearing.

**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 to the attention of Meisha Scott, Health and Human Services Commission, Rate Analysis, Mail Code H-400, P.O. Box 85200, Austin, Texas 78708-5200; by fax to Meisha Scott at (512) 491-1998; or by e-mail to meisha.scott@hhsc.state.tx.us. In addition, written comments may be sent by overnight mail or hand delivered to Meisha Scott, HHSC, Rate Analysis, Mail Code H-400, Braker Center, Building H, 11209 Metric Boulevard, Austin, Texas 78758-4021.

TRD-200902206

Steve Aragón

Chief Counsel

Texas Health and Human Services Commission

Filed: June 3, 2009



### Notice of Public Hearing on Proposed Medicaid Payment Rates

**Hearing.** The Texas Health and Human Services Commission (HHSC) will conduct a public hearing on July 1, 2009, at 9:00 a.m. to receive public comment on rate increases for the Community Living Assistance and Support Services (CLASS) waiver program operated by the Department of Aging and Disability Services (DADS). The hearing will be held in compliance with Human Resources Code §32.0282 and Texas Administrative Code (TAC) Title 1, §355.105(g), which require public notice and hearings on proposed Medicaid reimbursements. The public hearing will be held in the Lone Star Conference Room of the Health and Human Services Commission, Braker Center, Building H, located at 11209 Metric Boulevard, Austin, Texas. Entry is through Security at the main entrance of the building, which faces Metric Boulevard. Persons requiring Americans with Disability Act (ADA) accommodation or auxiliary aids or services should contact Meisha Scott by calling (512) 491-1445, at least 72 hours prior to the hearing so appropriate arrangements can be made.

**Proposal.** HHSC proposes to increase the rates for certain services provided under CLASS. The proposed rates will be effective September 1, 2009, and were determined in accordance with the rate setting methodologies listed below under "Methodology and Justification."

**Methodology and Justification.** The proposed rates were determined in accordance with the rate setting methodologies codified at: §355.112, Attendant Compensation Rate Enhancement; §355.114, Consumer Directed Services Payment Option; proposed new §355.502, Reimbursement Methodology for Professional Services in Home and Community-Based Services Waivers; proposed amended §355.505, Reimbursement Methodology for the Community Living Assistance and Support Services Waiver Program; and §355.6907, Reimbursement Methodology for Day Activity and Health Services.

The proposed amendments to §355.505 and the proposed new §355.502 will be published in the July 3, 2009, issue of the *Texas*

*Register.* These proposed new rule and amendments to the rules will give HHSC the authority to combine allowable costs per unit of service for identical professional services from all DADS 1915(c) waiver programs into a single database for use in determining rates for these services.

The proposed rates for CLASS were subsequently adjusted in accordance with §355.101, Introduction, and §355.109, Adjusting Reimbursement When New Legislation, Regulations or Economic Factors Affect Costs. These changes are being made in accordance with the 2010-11 General Appropriations Act (Article II, S.B. 1, 81st Legislature, Regular Session, 2009), which appropriated \$110,298,243 general revenue funds for the State Fiscal Year 2010-2011 biennium for Medicaid rate increases for DADS' community care programs.

**Briefing Package.** A briefing package describing the proposed payment rates will be available on June 17, 2009. Interested parties may obtain a copy of the briefing package prior to the hearing by contacting Meisha Scott by telephone at (512) 491-1445; by fax at (512) 491-1998; or by e-mail at meisha.scott@hhsc.state.tx.us. The briefing package also will be available at the public hearing.

**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 to the attention of Meisha Scott, Health and Human Services Commission, Rate Analysis, Mail Code H-400, P.O. Box 85200, Austin, Texas 78708-5200; by fax to Meisha Scott at (512) 491-1998; or by e-mail to meisha.scott@hhsc.state.tx.us. In addition, written comments may be sent by overnight mail or hand delivered to Meisha Scott, HHSC, Rate Analysis, Mail Code H-400, Braker Center, Building H, 11209 Metric Boulevard, Austin, Texas 78758-4021.

TRD-200902208

Steve Aragón

Chief Counsel

Texas Health and Human Services Commission

Filed: June 3, 2009



#### Notice of Public Hearing on Proposed Medicaid Payment Rates

**Hearing.** The Texas Health and Human Services Commission (HHSC) will conduct a public hearing on July 1, 2009, at 9:00 a.m. to receive public comment on rate increases for the Deaf-Blind with Multiple Disabilities (DBMD) waiver program operated by the Department of Aging and Disability Services (DADS). The hearing will be held in compliance with Human Resources Code §32.0282 and Texas Administrative Code (TAC) Title 1, §355.105(g), which require public notice and hearings on proposed Medicaid reimbursements. The public hearing will be held in the Lone Star Conference Room of the Health and Human Services Commission, Braker Center, Building H, located at 11209 Metric Boulevard, Austin, Texas. Entry is through Security at the main entrance of the building, which faces Metric Boulevard. Persons requiring Americans with Disability Act (ADA) accommodation or auxiliary aids or services should contact Meisha Scott by calling (512) 491-1445, at least 72 hours prior to the hearing so appropriate arrangements can be made.

**Proposal.** HHSC proposes to increase the rates for certain services provided under DBMD. The proposed rates will be effective September 1, 2009, and were determined in accordance with the rate setting methodologies listed below under "Methodology and Justification."

**Methodology and Justification.** The proposed rates were determined in accordance with the rate setting methodologies codified at: §355.112, Attendant Compensation Rate Enhancement; §355.114,

Consumer Directed Services Payment Option; proposed new §355.502, Reimbursement Methodology for Professional Services in Home and Community-Based Services Waivers; and proposed new §355.513, Reimbursement Methodology for the Deaf-Blind with Multiple Disabilities Waiver Program.

The proposed new §355.502 and §355.513 will be published in the July 3, 2009, issue of the *Texas Register*. Proposed new §355.502 will give HHSC the authority to combine allowable costs per unit of service for identical professional services from all DADS 1915(c) waiver programs into a single database for use in determining rates for these services. Proposed new §355.513 moves the reimbursement methodology language from §355.9022, Reimbursement Methodology for Community-Based Services Provided to People Who Are Deaf-Blind with Multiple Disabilities, which is simultaneously being proposed to be repealed, to a more appropriate subchapter. The proposed §355.513 also adds a reimbursement methodology for requisition fees to provide payments for the cost of acquiring adaptive aids and minor home modifications for consumers.

The proposed rates for DBMD were subsequently adjusted in accordance with §355.101, Introduction, and §355.109, Adjusting Reimbursement When New Legislation, Regulations or Economic Factors Affect Costs. These changes are being made in accordance with the 2010-11 General Appropriations Act (Article II, S.B. 1, 81st Legislature, Regular Session, 2009), which appropriated \$110,298,243 general revenue funds for the State Fiscal Year 2010-2011 biennium for Medicaid rate increases for DADS' community care programs.

**Briefing Package.** A briefing package describing the proposed payment rates will be available on June 17, 2009. Interested parties may obtain a copy of the briefing package prior to the hearing by contacting Meisha Scott by telephone at (512) 491-1445; by fax at (512) 491-1998; or by e-mail at meisha.scott@hhsc.state.tx.us. The briefing package also will be available at the public hearing.

**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 to the attention of Meisha Scott, Health and Human Services Commission, Rate Analysis, Mail Code H-400, P.O. Box 85200, Austin, Texas 78708-5200; by fax to Meisha Scott at (512) 491-1998; or by e-mail to meisha.scott@hhsc.state.tx.us. In addition, written comments may be sent by overnight mail or hand delivered to Meisha Scott, HHSC, Rate Analysis, Mail Code H-400, Braker Center, Building H, 11209 Metric Boulevard, Austin, Texas 78758-4021.

TRD-200902212

Steve Aragón

Chief Counsel

Texas Health and Human Services Commission

Filed: June 3, 2009



#### Notice of Public Hearing on Proposed Medicaid Payment Rates

**Hearing.** The Texas Health and Human Services Commission (HHSC) will conduct a public hearing on July 1, 2009, at 9:00 a.m. to receive public comment on proposed rate increases for the following community care programs and services operated by the Department of Aging and Disability Services (DADS): Community Based Alternatives Assisted Living/Residential Care (CBA AL/RC); Community Based Alternatives Personal Care III (CBA PC III); Day Activity and Health Services (DAHS); Medically Dependent Children Program (MDCP); Primary Home Care (PHC); and Residential Care (RC). The hearing will be held in compliance with Human Resources Code §32.0282 and 1 Texas Administrative Code (TAC) §355.105(g), which require public

notice and hearings on proposed Medicaid reimbursements. The public hearing will be held in the Lone Star Conference Room of the Health and Human Services Commission, Braker Center, Building H, located at 11209 Metric Boulevard, Austin, Texas. Entry is through Security at the main entrance of the building, which faces Metric Boulevard. Persons requiring Americans with Disability Act (ADA) accommodation or auxiliary aids or services should contact Meisha Scott by calling (512) 491-1445, at least 72 hours prior to the hearing so appropriate arrangements can be made.

**Proposal.** HHSC proposes to adopt payment for certain services provided under the programs listed above. The proposed rates will be effective September 1, 2009, and were determined in accordance with the rate setting methodologies listed below under "Methodology and Justification."

**Methodology and Justification.** The proposed rates for CBA AL/RC were determined in accordance with the rate setting methodologies codified at: 1 TAC §355.112, Attendant Compensation Rate Enhancement; proposed amended 1 TAC §355.503, Reimbursement Methodology for the Community-Based Alternatives Waiver Program and Assisted Living/Residential Care Programs; proposed new 1 TAC §355.502, Reimbursement Methodology for Professional Services in Home and Community-Based Services Waivers, and 1 TAC §355.509, Reimbursement Methodology for Residential Care. The proposed rule amendments to 1 TAC §355.503 and new 1 TAC §355.502, which will be published in the July 3, 2009, issue of the *Texas Register*, will give HHSC the authority to combine allowable costs per unit of service for identical professional services from all DADS 1915(c) waiver programs into a single database for use in determining rates for these services.

The proposed rates for CBA PC III were determined in accordance with the rate setting methodologies codified at proposed amended 1 TAC §355.503, Reimbursement Methodology for the Community-Based Alternatives Waiver Program and Assisted Living/Residential Care Programs, and 1 TAC §355.509, Reimbursement Methodology for Residential Care. The proposed rule amendments to 1 TAC §355.503, which will be published in the July 3, 2009, issue of the *Texas Register*, are outlined above.

The proposed rates for DAHS were determined in accordance with 1 TAC §355.112, Attendant Compensation Rate Enhancement, and 1 TAC §355.6907, Reimbursement Methodology for Day Activity and Health Services.

The proposed rates for MDCP were determined in accordance with 1 TAC §355.112, Attendant Compensation Rate Enhancement, 1 TAC §355.114, Consumer Directed Services Payment Option, proposed new 1 TAC §355.502, Reimbursement Methodology for Professional Services in Home and Community-Based Services Waivers, and proposed amended 1 TAC §355.507, Reimbursement Methodology for the Medically Dependent Children Program. The proposed rule amendments to 1 TAC §355.507, which will be published in the July 3, 2009, issue of the *Texas Register*, remove language relating to nursing rates prior to September 1, 2007, rates for independent nurses, and language on pro forma reimbursement methodology. The proposed amendments and proposed new 1 TAC §355.502 will also give HHSC the authority to combine allowable costs per unit of service for identical professional services from all DADS 1915(c) waiver programs into a single database for use in determining rates for these services.

The proposed rates for PHC were determined in accordance with 1 TAC §355.112, Attendant Compensation Rate Enhancement, 1 TAC §355.114, Consumer Directed Services Payment Option, and 1 TAC §355.5902, Reimbursement Methodology for Primary Home Care.

The proposed rates for RC were determined in accordance with 1 TAC §355.112, Attendant Compensation Rate Enhancement, and 1 TAC §355.509, Reimbursement Methodology for Residential Care.

The proposed rates for the programs listed above were subsequently adjusted in accordance with 1 TAC §355.101, Introduction, and 1 TAC §355.109, Adjusting Reimbursement When New Legislation, Regulations or Economic Factors Affect Costs. These changes are being made in accordance with the 2010-11 General Appropriations Act (Article II, Senate Bill 1, 81st Legislature, Regular Session, 2009), which appropriated \$110,298,243 general revenue funds for the State Fiscal Year 2010-2011 biennium for Medicaid rate increases for DADS' community care programs.

**Briefing Package.** A briefing package describing the proposed payment rates will be available on June 17, 2009. Interested parties may obtain a copy of the briefing package prior to the hearing by contacting Meisha Scott by telephone at (512) 491-1445; by fax at (512) 491-1998; or by e-mail at [meisha.scott@hhsc.state.tx.us](mailto:meisha.scott@hhsc.state.tx.us). The briefing package also will be available at the public hearing.

**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 to the attention of Meisha Scott, Health and Human Services Commission, Rate Analysis, Mail Code H-400, P.O. Box 85200, Austin, Texas 78708-5200; by fax to Meisha Scott at (512) 491-1998; or by e-mail to [meisha.scott@hhsc.state.tx.us](mailto:meisha.scott@hhsc.state.tx.us). In addition, written comments may be sent by overnight mail or hand delivered to Meisha Scott, HHSC, Rate Analysis, Mail Code H-400, Braker Center, Building H, 11209 Metric Boulevard, Austin, Texas 78758-4021.

TRD-200902213

Steve Aragón

Chief Counsel

Texas Health and Human Services Commission

Filed: June 3, 2009



## Notice of Public Hearing on Proposed Medicaid Payment Rates

**Hearing.** The Texas Health and Human Services Commission (HHSC) will conduct a public hearing on July 1, 2009, at 11:00 a.m. to receive public comment on rate increases for the Youth Empowerment Services (YES) waiver program operated by the Department of State Health Services (DSHS). The hearing will be held in compliance with Human Resources Code §32.0282 and Texas Administrative Code (TAC) Title 1, §355.105(g), which require public notice and hearings on proposed Medicaid reimbursements. The public hearing will be held in the Lone Star Conference Room of the Health and Human Services Commission, Braker Center, Building H, located at 11209 Metric Boulevard, Austin, Texas. Entry is through Security at the main entrance of the building, which faces Metric Boulevard. Persons requiring Americans with Disability Act (ADA) accommodation or auxiliary aids or services should contact Meisha Scott by calling (512) 491-1445, at least 72 hours prior to the hearing so appropriate arrangements can be made.

**Proposal.** HHSC proposes to adopt rates for the YES waiver program. The proposed rates will be effective September 1, 2009, and were determined in accordance with the rate setting methodologies listed below under "Methodology and Justification."

**Methodology and Justification.** The proposed rates were determined in accordance with the rate setting methodologies codified at TAC Title 1 Chapter 355, Subchapter A, §355.101, Introduction, and proposed new §355.9060, Reimbursement Methodology for the Youth Empowerment Services Waiver Program. The YES waiver program is a new

program effective September 1, 2009, and requires rates before DSHS can implement the program.

**Briefing Package.** A briefing package describing the proposed payment rates will be available on June 17, 2009. Interested parties may obtain a copy of the briefing package prior to the hearing by contacting Meisha Scott by telephone at (512) 491-1445; by fax at (512) 491-1998; or by e-mail at [meisha.scott@hhsc.state.tx.us](mailto:meisha.scott@hhsc.state.tx.us). The briefing package also will be available at the public hearing.

**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 to the attention of Meisha Scott, Health and Human Services Commission, Rate Analysis, Mail Code H-400, P.O. Box 85200, Austin, Texas 78708-5200; by fax to Meisha Scott at (512) 491-1998; or by e-mail to [meisha.scott@hhsc.state.tx.us](mailto:meisha.scott@hhsc.state.tx.us). In addition, written comments may be sent by overnight mail or hand delivered to Meisha Scott, HHSC, Rate Analysis, Mail Code H-400, Braker Center, Building H, 11209 Metric Boulevard, Austin, Texas 78758-4021.

TRD-200902216

Steve Aragón

Chief Counsel

Texas Health and Human Services Commission

Filed: June 3, 2009



## Department of State Health Services

### Designation of Salud y Vida as a Site Serving Medically Underserved Populations

The Department of State Health Services (department) is required under the Occupations Code, §157.052, to designate sites serving medically underserved populations. In addition, the department is required to publish notice of such designations in the *Texas Register* and to provide an opportunity for public comment on the designations.

Accordingly, the department has proposed designating the following as a site serving medically underserved populations: Salud y Vida, 3329 Montana Avenue, El Paso, Texas 79903. The designation is based on proven eligibility as a site serving a disproportionate number of clients eligible for federal, state, or locally funded health care programs.

Oral and written comments on this designation may be directed to Brian King, Program Director, Health Professions Resource Center - MC 1898, Center for Health Statistics, Department of State Health Services, P.O. Box 149347, Austin, Texas 78714-9347; telephone (512) 458-7261. Comments will be accepted for 30 days from the publication date of this notice.

TRD-200902218

Lisa Hernandez

General Counsel

Department of State Health Services

Filed: June 3, 2009



## Texas Department of Housing and Community Affairs

### Notice of Public Hearing - Low-Income Home Energy Assistance Program State Plan

For the Federal Fiscal Year (FFY) that begins October 1, 2009, the Texas Department of Housing and Community Affairs (TDHCA) anticipates receiving federal funds to continue the operation of programs

that assist very low-income Texans with home energy. In the process of deciding how to use Low-Income Home Energy Assistance Program State Plan (LIHEAP) funds, TDHCA solicits public input on the details of the plan.

As part of the public information, consultation, and public hearing requirements for LIHEAP, the Community Affairs Division of TDHCA has posted the proposed plan on the TDHCA internet site and will conduct a public hearing. Primarily, the hearing solicits comments on the proposed use and distribution of federal fiscal year (FFY) 2010 funds provided under LIHEAP. LIHEAP provides funding for the Weatherization Assistance Program (WAP) and utility assistance--known as "Comprehensive Energy Assistance Program (CEAP)."

The public hearing has been scheduled as follows:

**Friday, June 26, 2009, 2:30 p.m.**

**Room #116, Insurance Annex Building**

**221 East 11th Street**

**Austin, Texas 78701**

A representative from TDHCA will explain the planning process and receive comments from stakeholders and the general public regarding the proposed plan for LIHEAP. A copy of the Draft LIHEAP may be obtained after June 1, 2009, through TDHCA's web site, <http://www.tdhca.state.tx.us/ea.htm> or by contacting the Texas Department of Housing and Community Affairs, Community Affairs Division, Energy Assistance Section, P.O. Box 13941, Austin, Texas 78711-3941, or by phone at (512) 475-1435.

Anyone may submit comments on the draft plan in written form or oral testimony at the public hearing. TDHCA must receive written comments no later than 5:00 p.m., Friday, June 26, 2009. Comments concerning the draft plan may be submitted via the Internet to [john.touchet@tdhca.state.tx.us](mailto:john.touchet@tdhca.state.tx.us) or by fax to (512) 475-3935 or by mail to the Texas Department of Housing and Community Affairs, Community Affairs Division, Energy Assistance Section, Attention: John Touchet, P.O. Box 13941, Austin, Texas 78711-3941. If you have questions regarding the public hearing process or any of the programs referenced above, please contact TDHCA, Community Affairs Division, Energy Assistance Section.

Individuals who require auxiliary aids or services for this meeting should contact Gina Esteves at (512) 475-3943 or Relay Texas at 1-800-735-2989 at least two days before the meeting so that appropriate arrangements can be made.

Non-English speaking individuals who require interpreters for this meeting should contact John Touchet, (512) 475-1435 at least three days before the meeting so that appropriate arrangements can be made.

Personas que hablan español y requieren un intérprete, favor de llamar a Jorge Reyes al siguiente número (512) 475-4577 por lo menos tres días antes de la junta para hacer los preparativos apropiados.

TRD-200902205

Michael Gerber

Executive Director

Texas Department of Housing and Community Affairs

Filed: June 3, 2009



## Department of Information Resources

### Request for Proposals

The Texas Department of Information Resources (DIR) announces its Request for Proposals for Transactional Legal Services for fiscal year

2010 (RFP No. DIR-LEGAL-Transactional-Fiscal Year 2010) from qualified law firms and attorneys. The successful respondent, if any, will provide transactional legal services to DIR on an as needed basis as described in the RFP during fiscal year 2010. At DIR's option, the contract may be extended one additional year.

The transactional legal services that may be provided include: full range intellectual property representation; reviewing, drafting, and negotiating information resources contracts, licenses and amendments thereto; reviewing and drafting procurement documents relevant to the solicitation of information resources products and services; advising management and attorneys on legal strategies to best protect DIR in information resources transactions; providing legal advice and counsel to DIR management and attorneys with respect to bankruptcy proceedings related to DIR contracts; and providing legal advice and counsel to DIR management and attorneys with respect to bid protests and challenges.

Contact: Parties interested in submitting a proposal should contact Carrie Cooper, Purchaser, Texas Department of Information Resources, 300 West 15th Street, Suite 1300, Room 1335, Austin, Texas 78701, (512) 936-6896, [carrie.cooper@dir.state.tx.us](mailto:carrie.cooper@dir.state.tx.us), to obtain a copy of the RFP. The RFP is available electronically on the Electronic State Business Daily after Monday, June 1, 2009.

Questions: All written questions regarding the RFP must be received by Ms. Cooper (contact information above) by 4:00 p.m. CDT, June 11, 2009. Questions received after this time and date will not be considered. DIR expects to post responses to questions by 4:00 p.m. CDT, June 19, 2009.

Closing Date: Proposals must be delivered to Carrie Cooper, Purchaser, Texas Department of Information Resources, 300 West 15th Street, Suite 1300, Room 1335, Austin, Texas 78701 no later than 4:00 p.m. CDT, July 1, 2009. Proposals received after this time and date will not be considered regardless of the reason for the late delivery and receipt.

Evaluation Criteria: Proposals will be evaluated under the evaluation criteria outlined in the RFP. The Executive Director shall make the final decision on any contract award or awards resulting from this RFP.

DIR reserves the right, in its sole discretion, to accept or reject any or all proposals submitted. DIR is not obligated to award or execute any contracts on the basis of this notice or the distribution of any RFP. DIR shall not pay for any costs incurred by any entity in responding to this notice or the RFP.

TRD-200902181  
Renee Mauzy  
General Counsel  
Department of Information Resources  
Filed: June 1, 2009

◆ ◆ ◆  
**Texas Department of Insurance**

**Company Licensing**

Application to change the name of HOMESHIELD INSURANCE CO. to LIFESHIELD NATIONAL INSURANCE CO., a foreign life company. The home office is in Oklahoma City, Oklahoma.

Application for admission to the State of Texas by ASPEN U.S. INSURANCE COMPANY, a foreign fire and casualty company. The home office is in New York, New York.

Application to change the name of GMAC INSURANCE COMPANY ONLINE, INC. to ALLY INSURANCE COMPANY ONLINE, INC.,

a foreign fire and casualty company. The home office is in Maryland Heights, Missouri.

Any objections must be filed with the Texas Department of Insurance, within twenty (20) calendar days from the date of the *Texas Register* publication, addressed to the attention of Godwin Ohaechesi, 333 Guadalupe Street, M/C 305-2C, Austin, Texas 78701.

TRD-200902210  
Gene C. Jarmon  
General Counsel and Chief Clerk  
Texas Department of Insurance  
Filed: June 3, 2009

◆ ◆ ◆  
**Notice of Application by a Small Employer Health Benefit Plan Issuer to be a Risk-Assuming Health Benefit Plan Issuer**

Notice is given to the public of the application of the listed small employer health benefit plan issuer to be a risk-assuming health benefit plan issuer under Insurance Code §1501.312. A small employer health benefit plan issuer is defined by Insurance Code §1501.002(16) as a health benefit plan issuer offering, delivering, issuing for delivery, or renewing health benefit plans subject to the Insurance Code, Chapter 1501, Subchapters C - H. A risk-assuming health benefit plan issuer is defined by Insurance Code §1501.301(4) as a small employer health benefit plan issuer that does not participate in the Texas Health Reinsurance System. The following small employer health benefit plan issuer has applied to be a risk-assuming health benefit plan issuer:

UniCare Health Plans of Texas, Inc.

The application is subject to public inspection at the offices of the Texas Department of Insurance, Legal Division - Nick Hoelscher, 333 Guadalupe, Tower I, Room 920, Austin, Texas.

If you wish to comment on the application of UniCare Health Plans of Texas, Inc. to be a risk-assuming health benefit plan issuer, you must submit your written comments within 60 days after publication of this notice in the *Texas Register* to Gene C. Jarmon, General Counsel and Chief Clerk, Mail Code 113-2A, Texas Department of Insurance, P.O. Box 149104, Austin, Texas 78714-91204. Upon consideration of the application and comments, and a determination that all requirements of law have been met, the Commissioner or his designee may take final action on the applicant's election to be a risk-assuming health benefit plan issuer.

TRD-200902209  
Gene C. Jarmon  
General Counsel and Chief Clerk  
Texas Department of Insurance  
Filed: June 3, 2009

◆ ◆ ◆  
**Texas Department of Licensing and Regulation**

**Public Notice - Revised Enforcement Plan**

The Texas Commission of Licensing and Regulation ("Commission") provides this public notice that at their regularly scheduled meeting held May 19, 2009, the Commission adopted the Texas Department of Licensing and Regulation's ("Department") revised enforcement plan which was established in compliance with Texas Occupations Code, §51.302(c).

The enforcement plan gives all license holders notice of the specific ranges of penalties and license sanctions that apply to specific alleged violations of the statutes and rules enforced by the Department. The



enforcement plan also presents the criteria that are considered by the Department's Enforcement staff in determining the amount of a proposed administrative penalty or the magnitude of a proposed sanction.

The enforcement plan is revised to update penalty matrices for Cosmetologists and Cosmetology Schools. The changes are necessary as a result of statutory changes which occurred during the 80th Legislative Session regarding provisions that allowed for dual shop and mobile shop licenses and allowed shops that perform manicure and pedicure services to use other forms of sterilizers aside from an autoclave.

A copy of the revised enforcement plan is posted on the Department's website and may be downloaded at [www.license.state.tx.us](http://www.license.state.tx.us). You may also contact the Enforcement Division at (512) 539-5600 or by e-mail at [enforcement@license.state.tx.us](mailto:enforcement@license.state.tx.us) to obtain a copy of the revised plan.

TRD-200902200

William H. Kuntz, Jr.

Executive Director

Texas Department of Licensing and Regulation

Filed: June 3, 2009



## **Texas Lottery Commission**

Instant Game Number 1200 "Super Black Jack"

1.0 Name and Style of Game.

A. The name of Instant Game No. 1200 is "SUPER BLACK JACK". The play style is "poker".

1.1 Price of Instant Ticket.

A. Tickets for Instant Game No. 1200 shall be \$1.00 per ticket.

1.2 Definitions in Instant Game No. 1200.

A. Display Printing - That area of the instant game 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 ticket.

C. Play Symbol - The printed data under the latex on the front of the instant 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: 4 CARD SYMBOL, 5 CARD SYMBOL, 6 CARD SYMBOL, 7 CARD SYMBOL, 8 CARD SYMBOL, 9 CARD SYMBOL, 10 CARD SYMBOL, J CARD SYMBOL, Q CARD SYMBOL, K CARD SYMBOL, A CARD SYMBOL, 17 CARD SYMBOL, 18 CARD SYMBOL, 19 CARD SYMBOL, 20 CARD SYMBOL, \$1.00, \$2.00, \$4.00, \$5.00, \$10.00, \$20.00, \$40.00, \$100, and \$1,000.

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. 1200 - 1.2D**

<b>PLAY SYMBOL</b>	<b>CAPTION</b>
4 CARD SYMBOL	FOR
5 CARD SYMBOL	FIV
6 CARD SYMBOL	SIX
7 CARD SYMBOL	SVN
8 CARD SYMBOL	EGT
9 CARD SYMBOL	NIN
10 CARD SYMBOL	TEN
J CARD SYMBOL	JCK
Q CARD SYMBOL	QUN
K CARD SYMBOL	KNG
A CARD SYMBOL	ACE
17 CARD SYMBOL	SEVTN
18 CARD SYMBOL	EGHTN
19 CARD SYMBOL	NINTN
20 CARD SYMBOL	TWENTY
\$1.00	ONE\$
\$2.00	TWO\$
\$4.00	FOUR\$
\$5.00	FIVE\$
\$10.00	TEN\$
\$20.00	TWENTY
\$40.00	FORTY
\$100	ONE HUND
\$1,000	ONE THOU

E. Serial Number - A unique 14 (fourteen) digit number appearing under the latex scratch-off covering on the front of the ticket. There will be a four (4)-digit "security number" which will be individually boxed and randomly placed within the number. The remaining ten (10) digits of the Serial Number are the Validation Number. The Serial Number is positioned beneath the bottom row of play data in the scratched-off play area. The Serial Number is for validation purposes and cannot be used to play the game. The format will be: 00000000000000.

F. Low-Tier Prize - A prize of \$1.00, \$2.00, \$4.00, \$5.00, \$10.00, or \$20.00.

G. Mid-Tier Prize - A prize of \$40.00 or \$100.

H. High-Tier Prize - A prize of \$1,000.

I. Bar Code - A 24 (twenty-four) 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 ticket.

J. Pack-Ticket Number - A 14 (fourteen) digit number consisting of the four (4) digit game number (1200), a seven (7) digit pack number, and a three (3) digit ticket number. Ticket numbers start with 001 and end with 150 within each pack. The format will be: 1200-0000001-001.

K. Pack - A pack of "SUPER BLACK JACK" Instant Game tickets contains 150 tickets, packed in plastic shrink-wrapping and fanfolded

in pages of five (5). Tickets 001 to 005 will be on the top page; tickets 006 to 010 on the next page; etc.; and tickets 146 to 150 will be on the last page with backs exposed. Ticket 001 will be folded over so the front of ticket 001 and 010 will be exposed.

L. Non-Winning Ticket - A ticket which is not programmed to be a winning ticket or a 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.

M. Ticket or Instant Game Ticket, or Instant Ticket - A Texas Lottery "SUPER BLACK JACK" Instant Game No. 1200 ticket.

2.0 Determination of Prize Winners. The determination of prize winners is subject to the general ticket validation requirements set forth in Texas Lottery Rule §401.302, Instant Game Rules, these Game Procedures, and the requirements set out on the back of each instant ticket. A prize winner in the "SUPER BLACK JACK" Instant Game is determined once the latex on the ticket is scratched off to expose 13 (thirteen) Play Symbols. If any of HANDS 1-4 beats the DEALER'S HAND, the player wins PRIZE shown for that hand. If any of HANDS 1-4 equals 21, the player wins ALL 4 PRIZES. No portion of the display printing nor any extraneous matter whatsoever shall be usable or playable as a part of the Instant Game.

## 2.1 Instant Ticket Validation Requirements.

A. To be a valid Instant Game ticket, all of the following requirements must be met:

1. Exactly 13 (thirteen) Play Symbols must appear under the latex overprint on the front portion of the 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 ticket shall be intact;
6. The Serial Number, Retailer Validation Code and 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 ticket;
8. The ticket must not have a hole punched through it, be mutilated, altered, unreadable, reconstituted, or tampered with in any manner;
9. The ticket must not be counterfeit in whole or in part;
10. The ticket must have been issued by the Texas Lottery in an authorized manner;
11. The ticket must not have been stolen, nor appear on any list of omitted tickets or non-activated tickets on file at the Texas Lottery;
12. The Play Symbols, Serial Number, Retailer Validation Code, and Pack-Ticket Number must be right side up and not reversed in any manner;
13. The ticket must be complete and not miscut, and have exactly 13 (thirteen) Play Symbols under the latex overprint on the front portion of the ticket, exactly one Serial Number, exactly one Retailer Validation Code, and exactly one Pack-Ticket Number on the ticket;
14. The Serial Number of an apparent winning ticket shall correspond with the Texas Lottery's Serial Numbers for winning tickets, and a ticket with that Serial Number shall not have been paid previously;
15. The ticket must not be blank or partially blank, misregistered, defective, or printed or produced in error;
16. Each of the 13 (thirteen) Play Symbols must be exactly one of those described in Section 1.2.C of these Game Procedures;
17. Each of the 13 (thirteen) Play Symbols on the ticket must be printed in the Symbol font and must correspond precisely to the artwork on file at the Texas Lottery; the 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 Pack-Ticket Number must be printed in the Pack-Ticket Number font and must correspond precisely to the artwork on file at the Texas Lottery;
18. The display printing on the ticket must be regular in every respect and correspond precisely to the artwork on file at the Texas Lottery; and
19. The ticket must have been received by the Texas Lottery by applicable deadlines.

B. The 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 Instant Game 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 ticket. In the event a defective ticket is purchased, the only responsibility or liability of the Texas Lottery shall be to replace the defective ticket with another unplayed ticket in that Instant Game (or a ticket of equivalent sales price from any other current Instant Lottery game) or refund the retail sales price of the ticket, solely at the Executive Director's discretion.

## 2.2 Programmed Game Parameters.

- A. Consecutive non-winning tickets will not have identical play data, spot for spot.
- B. No duplicate non-winning prize symbols.
- C. Non-winning prize symbols will never be the same as the winning prize symbol(s).
- D. No duplicate non-winning HANDS 1-4 in any order.
- E. No ties between any HANDS 1-4 and the DEALER'S HAND.
- F. No duplicate non-winning HANDS 1-4 play symbols within a HAND.
- G. No HAND 1-4 will total less than 14.
- H. When a HAND 1-4 totals "21" (win all), there will be no occurrence of any other HAND 1-4 on the ticket beating the DEALER'S HAND.
- I. The top prize symbol will appear once on every ticket unless otherwise restricted.

## 2.3 Procedure for Claiming Prizes.

A. To claim a "SUPER BLACK JACK" Instant Game prize of \$1.00, \$2.00, \$4.00, \$5.00, \$10.00, \$20.00, \$40.00, or \$100, a claimant shall sign the back of the ticket in the space designated on the ticket and present the winning 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 ticket; provided that the Texas Lottery Retailer may, but is not required, to pay a \$40.00 or \$100 ticket. 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 "SUPER BLACK JACK" Instant Game prize of \$1,000, the claimant must sign the winning ticket and 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 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 "SUPER BLACK JACK" Instant Game prize, the claimant must sign the winning ticket, thoroughly complete a claim form, and mail both to: Texas Lottery Commission, Post Office Box 16600, Austin, Texas 78761-6600. The risk of sending a ticket remains with the claimant. 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 a sufficient amount from the winnings of a person who has been finally determined to be:

1. delinquent in the payment of a tax or other money collected by the Comptroller of Public Accounts, the Texas Workforce Commission, or Texas Alcoholic Beverage Commission;
2. delinquent in making child support payments administered or collected by the Office of the Attorney General;
3. delinquent in reimbursing the Texas Health and Human Services Commission for a benefit granted in error under the food stamp program or the program of financial assistance under Chapter 31, Human Resources Code;
4. in default on a loan made under Chapter 52, Education Code; or
5. in default on a loan guaranteed under Chapter 57, Education 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.

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 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 of less than \$600 from the "SUPER BLACK JACK" Instant 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 more than \$600 from the "SUPER BLACK JACK" Instant 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 Instant Ticket Claim Period. All Instant Game prizes must be claimed within 180 days following the end of the Instant Game or within the applicable time period for certain eligible military personnel as set forth in Texas Government Code §466.408. Any prize not claimed within that period, and in the manner specified in these Game Procedures and on the back of each ticket, shall be forfeited.

2.8 Disclaimer. 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. An Instant Game ticket may continue to be sold even when all the top prizes have been claimed.

3.0 Instant Ticket Ownership.

A. Until such time as a signature is placed upon the back portion of an Instant Game ticket in the space designated, a ticket shall be owned by the physical possessor of said ticket. When a signature is placed on the back of the ticket in the space designated, the player whose signature appears in that area shall be the owner of the 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 ticket in the space designated. If more than one name appears on the back of the 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 Instant Game tickets and shall not be required to pay on a lost or stolen Instant Game ticket.

4.0 Number and Value of Instant Prizes. There will be approximately 11,040,000 tickets in the Instant Game No. 1200. The approximate number and value of prizes in the game are as follows:

Figure 2: GAME NO. 1200 - 4.0

Prize Amount	Approximate Number of Winners*	Approximate Odds are 1 in**
\$1	662,400	16.67
\$2	1,104,000	10.00
\$4	276,000	40.00
\$5	73,600	150.00
\$10	73,600	150.00
\$20	27,600	400.00
\$40	17,940	615.38
\$100	1,380	8,000.00
\$1,000	138	80,000.00

\*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 4.94. 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 tickets in the game may be increased or decreased at the sole discretion of the Texas Lottery Commission.

5.0 End of the Instant Game. The Executive Director may, at any time, announce a closing date (end date) for the Instant Game No. 1200 without advance notice, at which point no further tickets in that game may be sold. The determination of the closing date and reasons for closing the game will be made in accordance with the instant game closing procedures and the Instant Game Rules, 16 TAC §401.302(j).

6.0 Governing Law. In purchasing an Instant Game ticket, the player agrees to comply with, and abide by, these Game Procedures for Instant Game No. 1200, 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-200902130  
 Kimberly L. Kiplin  
 General Counsel  
 Texas Lottery Commission  
 Filed: June 1, 2009



Instant Game Number 1201 "Big Payout"

1.0 Name and Style of Game.

A. The name of Instant Game No. 1201 is "BIG PAYOUT". The play style is "key number match with multiplier".

1.1 Price of Instant Ticket.

A. Tickets for Instant Game No. 1201 shall be \$10.00 per ticket.

1.2 Definitions in Instant Game No. 1201.

A. Display Printing - That area of the instant game 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 ticket.

C. Play Symbol - The printed data under the latex on the front of the instant 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: 1, 2, 3, 4, 5, 6, 7, 8, 9, 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, MONEY BAG SYMBOL, 10X SYMBOL, \$10, \$20, \$50, \$100, \$200, \$500, \$1,000, \$2,500, and \$250,000.

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. 1201 - 1.2D

<b>PLAY SYMBOL</b>	<b>CAPTION</b>
1	ONE
2	TWO
3	THR
4	FOR
5	FIV
6	SIX
7	SVN
8	EGT
9	NIN
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
<b>MONEYBAG SYMBOL</b>	<b>MBAG</b>
<b>10X SYMBOL</b>	<b>WINX10</b>
\$10.00	TEN\$
\$20.00	TWENTY
\$50.00	FIFTY
\$100	ONE HUND
\$200	TWO HUND

\$500	FIV HUND
\$1,000	ONE THOU
\$2,500	25 HUND
\$250,000	250 THOU

E. Serial Number - A unique 14 (fourteen) digit number appearing under the latex scratch-off covering on the front of the ticket. There will be a four (4)-digit "security number" which will be individually boxed and randomly placed within the number. The remaining ten (10) digits of the Serial Number are the Validation Number. The Serial Number is positioned beneath the bottom row of play data in the scratched-off play area. The Serial Number is for validation purposes and cannot be used to play the game. The format will be: 00000000000000.

F. Low-Tier Prize - A prize of \$10.00 or \$20.00.

G. Mid-Tier Prize - A prize of \$50.00, \$100, \$200, or \$500.

H. High-Tier Prize - A prize of \$1,000, \$2,500 or \$250,000.

I. Bar Code - A 24 (twenty-four) 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 ticket.

J. Pack-Ticket Number - A 14 (fourteen) digit number consisting of the four (4) digit game number (1201), a seven (7) digit pack number, and a three (3) digit ticket number. Ticket numbers start with 001 and end with 050 within each pack. The format will be: 1201-0000001-001.

K. Pack - pack of "BIG PAYOUT" Instant Game tickets contains 050 tickets, packed in plastic shrink-wrapping and fanfolded in pages of one (1). Ticket back 001 and 050 will both be exposed.

L. Non-Winning Ticket - A ticket which is not programmed to be a winning ticket or a 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.

M. Ticket or Instant Game Ticket, or Instant Ticket - A Texas Lottery "BIG PAYOUT" Instant Game No. 1201 ticket.

2.0 Determination of Prize Winners. The determination of prize winners is subject to the general ticket validation requirements set forth in Texas Lottery Rule §401.302, Instant Game Rules, these Game Procedures, and the requirements set out on the back of each instant ticket. A prize winner in the "BIG PAYOUT" Instant Game is determined once the latex on the ticket is scratched off to expose 45 (forty-five) Play Symbols. If player matches any of YOUR NUMBERS play symbols to any of the WINNING NUMBERS play symbols, the player wins the PRIZE shown for that number. If the player reveals a "moneybag" symbol, the player wins the PRIZE shown for that symbol instantly. If a player reveals a "10X" play symbol, the player wins 10 TIMES the PRIZE shown for that symbol. No portion of the display printing nor any extraneous matter whatsoever shall be usable or playable as a part of the Instant Game.

2.1 Instant Ticket Validation Requirements.

A. To be a valid Instant Game ticket, all of the following requirements must be met:

1. Exactly 45 (forty-five) Play Symbols must appear under the latex overprint on the front portion of the 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 ticket shall be intact;

6. The Serial Number, Retailer Validation Code and 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 ticket;

8. The ticket must not have a hole punched through it, be mutilated, altered, unreadable, reconstituted, or tampered with in any manner;

9. The ticket must not be counterfeit in whole or in part;

10. The ticket must have been issued by the Texas Lottery in an authorized manner;

11. The ticket must not have been stolen, nor appear on any list of omitted tickets or non-activated tickets on file at the Texas Lottery;

12. The Play Symbols, Serial Number, Retailer Validation Code, and Pack-Ticket Number must be right side up and not reversed in any manner;

13. The ticket must be complete and not miscut, and have exactly 45 (forty-five) Play Symbols under the latex overprint on the front portion of the ticket, exactly one Serial Number, exactly one Retailer Validation Code, and exactly one Pack-Ticket Number on the ticket;

14. The Serial Number of an apparent winning ticket shall correspond with the Texas Lottery's Serial Numbers for winning tickets, and a ticket with that Serial Number shall not have been paid previously;

15. The ticket must not be blank or partially blank, misregistered, defective, or printed or produced in error;

16. Each of the 45 (forty-five) Play Symbols must be exactly one of those described in Section 1.2.C of these Game Procedures;

17. Each of the 45 (forty-five) Play Symbols on the ticket must be printed in the Symbol font and must correspond precisely to the artwork on file at the Texas Lottery; the 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 Pack-Ticket Number must be printed in the Pack-Ticket Number font and must correspond precisely to the artwork on file at the Texas Lottery;

18. The display printing on the ticket must be regular in every respect and correspond precisely to the artwork on file at the Texas Lottery; and

19. The ticket must have been received by the Texas Lottery by applicable deadlines.

B. The 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 Instant Game 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 ticket. In the event a defective ticket is purchased, the only responsibility or liability of the Texas Lottery shall be to replace the defective ticket with another unplayed ticket in that Instant Game (or a ticket of equivalent sales price from any other current Instant Lottery game) or refund the retail sales price of the ticket, solely at the Executive Director's discretion.

## 2.2 Programmed Game Parameters.

A. Consecutive non-winning tickets will not have identical play data, spot for spot.

B. The "10X" (win x 10) play symbol will only appear as dictated by the prize structure.

C. No duplicate non-winning YOUR NUMBERS play symbols.

D. No duplicate WINNING NUMBERS play symbols.

E. No more than four (4) matching non-winning prize symbols will appear on a ticket.

F. Non-winning prize symbols will never be the same as the winning prize symbol(s).

G. The play symbols, with the exception of the "10X" (win x 10) and "MONEYBAG" (auto win) play symbols, will be used an approximately equal number of times.

H. No prize amount in a non-winning spot will correspond with the play symbol (i.e., 20 and \$20).

I. The top prize symbol will appear on every ticket unless otherwise restricted.

## 2.3 Procedure for Claiming Prizes.

A. To claim a "BIG PAYOUT" Instant Game prize of \$10.00, \$20.00, \$50.00, \$100, \$200, or \$500, a claimant shall sign the back of the ticket in the space designated on the ticket and present the winning 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 ticket; provided that the Texas Lottery Retailer may, but is not required, to pay a \$50.00, \$100, \$200, or \$500, ticket. 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 "BIG PAYOUT" Instant Game prize of \$1,000, \$2,500, \$250,000, the claimant must sign the winning ticket and 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 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 "BIG PAYOUT" Instant Game prize, the claimant must sign the winning ticket, thoroughly complete a claim form, and mail both to: Texas Lottery Commission, Post Office Box 16600, Austin, Texas 78761-6600. The risk of sending a ticket remains with the claimant. 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 a sufficient amount from the winnings of a person who has been finally determined to be:

1. delinquent in the payment of a tax or other money collected by the Comptroller of Public Accounts, the Texas Workforce Commission, or Texas Alcoholic Beverage Commission;

2. delinquent in making child support payments administered or collected by the Office of the Attorney General;

3. delinquent in reimbursing the Texas Health and Human Services Commission for a benefit granted in error under the food stamp program or the program of financial assistance under Chapter 31, Human Resources Code;

4. in default on a loan made under Chapter 52, Education Code; or

5. in default on a loan guaranteed under Chapter 57, Education 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.

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 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 of less than \$600 from the "BIG PAYOUT" Instant 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 more than \$600 from the "BIG PAYOUT" Instant 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 Instant Ticket Claim Period. All Instant Game prizes must be claimed within 180 days following the end of the Instant Game or within the applicable time period for certain eligible military personnel as set forth in Texas Government Code §466.408. Any prize not claimed within that period, and in the manner specified in these Game Procedures and on the back of each ticket, shall be forfeited.

2.8 Disclaimer. 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. An Instant Game ticket may continue to be sold even when all the top prizes have been claimed.

3.0 Instant Ticket Ownership.

A. Until such time as a signature is placed upon the back portion of an Instant Game ticket in the space designated, a ticket shall be owned by the physical possessor of said ticket. When a signature is placed on the back of the ticket in the space designated, the player whose signature appears in that area shall be the owner of the 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 ticket in the

space designated. If more than one name appears on the back of the 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 Instant Game tickets and shall not be required to pay on a lost or stolen Instant Game ticket.

4.0 Number and Value of Instant Prizes. There will be approximately 4,080,000 tickets in the Instant Game No. 1201. The approximate number and value of prizes in the game are as follows:

Figure 2: GAME NO. 1201 - 4.0

Prize Amount	Approximate Number of Winners*	Approximate Odds are 1 in**
\$10	326,400	12.50
\$20	571,200	7.14
\$50	81,600	50.00
\$100	61,200	66.67
\$200	8,840	461.54
\$500	1,337	3,051.61
\$1,000	139	29,352.52
\$2,500	34	120,000.00
\$250,000	4	1,020,000.00

\*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 3.88. 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 tickets in the game may be increased or decreased at the sole discretion of the Texas Lottery Commission.

5.0 End of the Instant Game. The Executive Director may, at any time, announce a closing date (end date) for the Instant Game No. 1201 without advance notice, at which point no further tickets in that game may be sold.

6.0 Governing Law. In purchasing an Instant Game ticket, the player agrees to comply with, and abide by, these Game Procedures for Instant Game No. 1201, 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-200902131  
 Kimberly L. Kiplin  
 General Counsel  
 Texas Lottery Commission  
 Filed: June 1, 2009



Instant Game Number 1202 "Triple It"

1.0 Name and Style of Game.

A. The name of Instant Game No. 1202 is "TRIPLE IT". The play style is "key number match with tripler".

1.1 Price of Instant Ticket.

A. Tickets for Instant Game No. 1202 shall be \$3.00 per ticket.

1.2 Definitions in Instant Game No. 1202.

A. Display Printing - That area of the instant game 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 ticket.

C. Play Symbol - The printed data under the latex on the front of the instant 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: 1, 2, 3, 4, 5, 6, 7, 8, 9, 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, \$3.00, \$6.00, \$8.00, \$9.00, \$10.00, \$15.00, \$18.00, \$24.00, \$30.00, \$60.00, \$90.00, \$100, \$300, \$1,000, \$3,000, and \$30,000.

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. 1202 - 1.2D

PLAY SYMBOL	CAPTION
1	ONE
2	TWO
3	THR
4	FOR
5	FIV
6	SIX
7	SVN
8	EGT
9	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	TWV
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
\$3.00	THREE\$
\$6.00	SIX\$
\$8.00	EIGHT\$
\$9.00	NINE\$
\$10.00	TEN\$
\$15.00	FIFTN

\$18.00	EGHTN
\$24.00	TWY FOR
\$30.00	THIRTY
\$60.00	SIXTY
\$90.00	NINTY
\$100	ONE HUND
\$300	THR HUND
\$1,000	ONE THOU
\$3,000	THR THOU
\$30,000	30 THOU

E. Serial Number - A unique 14 (fourteen) digit number appearing under the latex scratch-off covering on the front of the ticket. There will be a four (4)-digit "security number" which will be individually boxed and randomly placed within the number. The remaining ten (10) digits of the Serial Number are the Validation Number. The Serial Number is positioned beneath the bottom row of play data in the scratched-off play area. The Serial Number is for validation purposes and cannot be used to play the game. The format will be: 00000000000000.

F. Low-Tier Prize - A prize of \$3.00, \$6.00, \$9.00, \$15.00, \$18.00, or \$24.00.

G. Mid-Tier Prize - A prize of \$30.00, \$60.00, \$90.00, or \$300.

H. High-Tier Prize - A prize of \$3,000 or \$30,000.

I. Bar Code - A 24 (twenty-four) 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 ticket.

J. Pack-Ticket Number - A 14 (fourteen) digit number consisting of the four (4) digit game number (1202), a seven (7) digit pack number, and a three (3) digit ticket number. Ticket numbers start with 001 and end with 125 within each pack. The format will be: 1202-0000001-001.

K. Pack - A pack of "TRIPLE IT" Instant Game tickets contains 125 tickets, packed in plastic shrink-wrapping and fanfolded in pages of one (1). There will be 2 fanfold configurations for this game. Configuration A will show the front of ticket 001 and the back of ticket 125. Configuration B will show the back of ticket 001 and the front of ticket 125.

L. Non-Winning Ticket - A ticket which is not programmed to be a winning ticket or a 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.

M. Ticket or Instant Game Ticket, or Instant Ticket - A Texas Lottery "TRIPLE IT" Instant Game No. 1202 ticket.

2.0 Determination of Prize Winners. The determination of prize winners is subject to the general ticket validation requirements set forth in Texas Lottery Rule §401.302, Instant Game Rules, these Game Procedures, and the requirements set out on the back of each instant ticket. A prize winner in the "TRIPLE IT" Instant Game is determined once the latex on the ticket is scratched off to expose 37 (thirty-seven) Play Symbols. If a player matches any of YOUR NUMBERS play symbols to any of the WINNING NUMBERS play symbols, the player wins PRIZE shown for that number. If a player matches the number in the BONUS SPOT" to any of YOUR NUMBERS play symbols, the player

wins TRIPLE the PRIZE shown for that number. No portion of the display printing nor any extraneous matter whatsoever shall be usable or playable as a part of the Instant Game.

#### 2.1 Instant Ticket Validation Requirements.

A. To be a valid Instant Game ticket, all of the following requirements must be met:

1. Exactly 37 (thirty-seven) Play Symbols must appear under the latex overprint on the front portion of the 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 ticket shall be intact;
6. The Serial Number, Retailer Validation Code and 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 ticket;
8. The ticket must not have a hole punched through it, be mutilated, altered, unreadable, reconstituted, or tampered with in any manner;
9. The ticket must not be counterfeit in whole or in part;
10. The ticket must have been issued by the Texas Lottery in an authorized manner;
11. The ticket must not have been stolen, nor appear on any list of omitted tickets or non-activated tickets on file at the Texas Lottery;
12. The Play Symbols, Serial Number, Retailer Validation Code, and Pack-Ticket Number must be right side up and not reversed in any manner;
13. The ticket must be complete and not miscut, and have exactly 37 (thirty-seven) Play Symbols under the latex overprint on the front portion of the ticket, exactly one Serial Number, exactly one Retailer Validation Code, and exactly one Pack-Ticket Number on the ticket;
14. The Serial Number of an apparent winning ticket shall correspond with the Texas Lottery's Serial Numbers for winning tickets, and a ticket with that Serial Number shall not have been paid previously;
15. The ticket must not be blank or partially blank, misregistered, defective, or printed or produced in error;

16. Each of the 37 (thirty-seven) Play Symbols must be exactly one of those described in Section 1.2.C of these Game Procedures;

17. Each of the 37 (thirty-seven) Play Symbols on the ticket must be printed in the Symbol font and must correspond precisely to the artwork on file at the Texas Lottery; the 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 Pack-Ticket Number must be printed in the Pack-Ticket Number font and must correspond precisely to the artwork on file at the Texas Lottery;

18. The display printing on the ticket must be regular in every respect and correspond precisely to the artwork on file at the Texas Lottery; and

19. The ticket must have been received by the Texas Lottery by applicable deadlines.

B. The 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 Instant Game 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 ticket. In the event a defective ticket is purchased, the only responsibility or liability of the Texas Lottery shall be to replace the defective ticket with another unplayed ticket in that Instant Game (or a ticket of equivalent sales price from any other current Instant Lottery game) or refund the retail sales price of the ticket, solely at the Executive Director's discretion.

## 2.2 Programmed Game Parameters.

A. Consecutive non-winning tickets will not have identical play data, spot for spot.

B. No duplicate WINNING NUMBERS play symbols.

C. No duplicate non-winning YOUR NUMBERS play symbols.

D. No more than three (3) matching non-winning prize symbols will appear on a ticket.

E Non-winning prize symbols will never be the same as the winning prize symbol(s).

F. No prize amount in a non-winning spot will correspond with the play symbol (i.e., 10 and \$10).

G. The BONUS SPOT play symbol will match to only one YOUR NUMBER play symbol on intended triple winning tickets as dictated by the prize structure.

H. The BONUS SPOT play symbol will never match to WINNING NUMBER play symbol.

I. The top prize symbol will appear on every ticket unless otherwise restricted.

## 2.3 Procedure for Claiming Prizes.

A. To claim a "TRIPLE IT" Instant Game prize of \$3.00, \$6.00, \$9.00, \$15.00, \$18.00, \$24.00, \$30.00, \$60.00, \$90.00, or \$300, a claimant shall sign the back of the ticket in the space designated on the ticket and present the winning 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 ticket; provided that the Texas Lottery Retailer may, but is not required, to pay a \$30.00, \$60.00, \$90.00, or \$300 ticket. 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 "TRIPLE IT" Instant Game prize of \$3,000 or \$30,000, the claimant must sign the winning ticket and 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 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 "TRIPLE IT" Instant Game prize, the claimant must sign the winning ticket, thoroughly complete a claim form, and mail both to: Texas Lottery Commission, Post Office Box 16600, Austin, Texas 78761-6600. The risk of sending a ticket remains with the claimant. 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 a sufficient amount from the winnings of a person who has been finally determined to be:

1. delinquent in the payment of a tax or other money collected by the Comptroller of Public Accounts, the Texas Workforce Commission, or Texas Alcoholic Beverage Commission;

2. delinquent in making child support payments administered or collected by the Office of the Attorney General;

3. delinquent in reimbursing the Texas Health and Human Services Commission for a benefit granted in error under the food stamp program or the program of financial assistance under Chapter 31, Human Resources Code;

4. in default on a loan made under Chapter 52, Education Code; or

5. in default on a loan guaranteed under Chapter 57, Education 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.

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 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 of less than \$600 from the "TRIPLE IT" Instant 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 more than \$600 from the "TRIPLE IT" Instant 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 Instant Ticket Claim Period. All Instant Game prizes must be claimed within 180 days following the end of the Instant Game or within the applicable time period for certain eligible military personnel as set forth in Texas Government Code §466.408. Any prize not claimed within that period, and in the manner specified in these Game Procedures and on the back of each ticket, shall be forfeited.

2.8 Disclaimer. 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. An Instant Game ticket may continue to be sold even when all the top prizes have been claimed.

3.0 Instant Ticket Ownership.

A. Until such time as a signature is placed upon the back portion of an Instant Game ticket in the space designated, a ticket shall be owned by the physical possessor of said ticket. When a signature is placed on the back of the ticket in the space designated, the player whose signature appears in that area shall be the owner of the 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 ticket in the space designated. If more than one name appears on the back of the 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 Instant Game tickets and shall not be required to pay on a lost or stolen Instant Game ticket.

4.0 Number and Value of Instant Prizes. There will be approximately 6,000,000 tickets in the Instant Game No. 1202. The approximate number and value of prizes in the game are as follows:

Figure 2: GAME NO. 1202 - 4.0

Prize Amount	Approximate Number of Winners*	Approximate Odds are 1 in**
\$3	384,000	15.63
\$6	528,000	11.36
\$9	108,000	55.56
\$15	36,000	166.67
\$18	60,000	100.00
\$24	48,000	125.00
\$30	48,000	125.00
\$60	18,450	325.20
\$90	6,500	923.08
\$300	1,400	4,285.71
\$3,000	18	333,333.33
\$30,000	7	857,142.86

\*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 4.85. 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 tickets in the game may be increased or decreased at the sole discretion of the Texas Lottery Commission.

5.0 End of the Instant Game. The Executive Director may, at any time, announce a closing date (end date) for the Instant Game No. 1202 without advance notice, at which point no further tickets in that game may be sold. The determination of the closing date and reasons for closing the game will be made in accordance with the instant game closing procedures and the Instant Game Rules, 16 TAC §401.302(j).

6.0 Governing Law. In purchasing an Instant Game ticket, the player agrees to comply with, and abide by, these Game Procedures for In-

stant Game No. 1202, 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-200902132  
 Kimberly L. Kiplin  
 General Counsel  
 Texas Lottery Commission  
 Filed: June 1, 2009



Instant Game Number 1206 "Double Doubler"

1.0 Name and Style of Game.

A. The name of Instant Game No. 1206 is "DOUBLE DOUBLER". The play style is "match 3 of 6 with 2x and 4x".

1.1 Price of Instant Ticket.

A. Tickets for Instant Game No. 1206 shall be \$1.00 per ticket.

1.2 Definitions in Instant Game No. 1206.

A. Display Printing - That area of the instant game 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 ticket.

C. Play Symbol - The printed data under the latex on the front of the instant 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: \$1.00, \$5.00, \$10.00, \$20.00, \$40.00, \$100, \$1,000, SINGLE PRIZE SYMBOL, DOUBLE PRIZE SYMBOL, and DOUBLE DOUBLER SYMBOL.

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. 1206 - 1.2D

PLAY SYMBOL	CAPTION
\$1.00	ONE\$
\$5.00	FIVE\$
\$10.00	TEN\$
\$20.00	TWENTY
\$40.00	FORTY
\$100	ONE HUND
\$1,000	ONE THOU
SINGLE PRIZE SYMBOL	1XPRIZE
DOUBLE PRIZE SYMBOL	2XPRIZE
DOUBLE DOUBLER SYMBOL	4XPRIZE

E. Serial Number - A unique 14 (fourteen) digit number appearing under the latex scratch-off covering on the front of the ticket. There will be a four (4)-digit "security number" which will be individually boxed and randomly placed within the number. The remaining ten (10) digits of the Serial Number are the Validation Number. The Serial Number is positioned beneath the bottom row of play data in the scratched-off play area. The Serial Number is for validation purposes and cannot be used to play the game. The format will be: 00000000000000.

F. Low-Tier Prize - A prize of \$1.00, \$2.00, \$4.00, \$10.00, or \$20.00.

G. Mid-Tier Prize - A prize of \$40.00, \$80.00, \$100, \$200, or \$400.

H. High-Tier Prize - A prize of \$1,000.

I. Bar Code - A 24 (twenty-four) 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 ticket.

J. Pack-Ticket Number - A 14 (fourteen) digit number consisting of the four (4) digit game number (1206), a seven (7) digit pack number, and a three (3) digit ticket number. Ticket numbers start with 001 and end with 150 within each pack. The format will be: 1206-0000001-001.

K. Pack - A pack of "DOUBLE DOUBLER" Instant Game tickets contains 150 tickets, packed in plastic shrink-wrapping and fanfolded in pages of five (5). Tickets 001 to 005 will be on the top page; tickets 006 to 010 on the next page; etc.; and tickets 146 to 150 will be on the last page with backs exposed. Ticket 001 will be folded over so the front of ticket 001 and 010 will be exposed.

L. Non-Winning Ticket - A ticket which is not programmed to be a winning ticket or a 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.

M. Ticket or Instant Game Ticket, or Instant Ticket - A Texas Lottery "DOUBLE DOUBLER" Instant Game No. 1206 ticket.

2.0 Determination of Prize Winners. The determination of prize winners is subject to the general ticket validation requirements set forth in Texas Lottery Rule §401.302, Instant Game Rules, these Game Procedures, and the requirements set out on the back of each instant ticket. A prize winner in the "DOUBLE DOUBLER" Instant Game is determined once the latex on the ticket is scratched off to expose 7 (seven) Play Symbols. If a player reveals 3 matching amounts, the player wins that amount. The player scratches the PRIZE LEVEL box for a chance to win DOUBLE or even 4 TIMES the prize! No portion of the display printing nor any extraneous matter whatsoever shall be usable or playable as a part of the Instant Game.

2.1 Instant Ticket Validation Requirements.

A. To be a valid Instant Game ticket, all of the following requirements must be met:

1. Exactly 7 (seven) Play Symbols must appear under the latex overprint on the front portion of the 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 ticket shall be intact;
  6. The Serial Number, Retailer Validation Code and 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 ticket;
  8. The ticket must not have a hole punched through it, be mutilated, altered, unreadable, reconstituted, or tampered with in any manner;
  9. The ticket must not be counterfeit in whole or in part;
  10. The ticket must have been issued by the Texas Lottery in an authorized manner;
  11. The ticket must not have been stolen, nor appear on any list of omitted tickets or non-activated tickets on file at the Texas Lottery;
  12. The Play Symbols, Serial Number, Retailer Validation Code, and Pack-Ticket Number must be right side up and not reversed in any manner;
  13. The ticket must be complete and not miscut, and have exactly 7 (seven) Play Symbols under the latex overprint on the front portion of the ticket, exactly one Serial Number, exactly one Retailer Validation Code, and exactly one Pack-Ticket Number on the ticket;
  14. The Serial Number of an apparent winning ticket shall correspond with the Texas Lottery's Serial Numbers for winning tickets, and a ticket with that Serial Number shall not have been paid previously;
  15. The ticket must not be blank or partially blank, misregistered, defective, or printed or produced in error;
  16. Each of the 7 (seven) Play Symbols must be exactly one of those described in Section 1.2.C of these Game Procedures;
  17. Each of the 7 (seven) Play Symbols on the ticket must be printed in the Symbol font and must correspond precisely to the artwork on file at the Texas Lottery; the 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 Pack-Ticket Number must be printed in the Pack-Ticket Number font and must correspond precisely to the artwork on file at the Texas Lottery;
  18. The display printing on the ticket must be regular in every respect and correspond precisely to the artwork on file at the Texas Lottery; and
  19. The ticket must have been received by the Texas Lottery by applicable deadlines.
- B. The 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 Instant Game 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 ticket. In the event a defective ticket is purchased, the only responsibility or liability of the Texas Lottery shall be to replace the defective ticket with another un-

played ticket in that Instant Game (or a ticket of equivalent sales price from any other current Instant Lottery game) or refund the retail sales price of the ticket, solely at the Executive Director's discretion.

## 2.2 Programmed Game Parameters.

- A. Consecutive non-winning tickets will not have identical play data, spot for spot.
- B. No more than 3 matching play symbols.
- C. No more than 1 set of 3 matching play symbols.
- D. No more than 2 pairs of matching play symbols.
- E. The "DOUBLE PRIZE" (win x 2) and "DOUBLE DOUBLER" (win x 4) PRIZE LEVEL play symbols will appear on intended winning tickets as dictated by the prize structure.
- F. The top prize symbol will appear once on every ticket unless otherwise restricted.

## 2.3 Procedure for Claiming Prizes.

A. To claim a "DOUBLE DOUBLER" Instant Game prize of \$1.00, \$2.00, \$4.00, \$10.00, \$20.00, \$40.00, \$80.00, \$100, \$200, or \$400, a claimant shall sign the back of the ticket in the space designated on the ticket and present the winning 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 ticket; provided that the Texas Lottery Retailer may, but is not required, to pay a \$40.00, \$80.00, \$100, \$200, or \$400 ticket. 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 "DOUBLE DOUBLER" Instant Game prize of \$1,000, the claimant must sign the winning ticket and 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 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 "DOUBLE DOUBLER" Instant Game prize, the claimant must sign the winning ticket, thoroughly complete a claim form, and mail both to: Texas Lottery Commission, Post Office Box 16600, Austin, Texas 78761-6600. The risk of sending a ticket remains with the claimant. 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 a sufficient amount from the winnings of a person who has been finally determined to be:

1. delinquent in the payment of a tax or other money collected by the Comptroller of Public Accounts, the Texas Workforce Commission, or Texas Alcoholic Beverage Commission;
2. delinquent in making child support payments administered or collected by the Office of the Attorney General;



3. delinquent in reimbursing the Texas Health and Human Services Commission for a benefit granted in error under the food stamp program or the program of financial assistance under Chapter 31, Human Resources Code;

4. in default on a loan made under Chapter 52, Education Code; or

5. in default on a loan guaranteed under Chapter 57, Education 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.

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 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 of less than \$600 from the "DOUBLE DOUBLER" Instant 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 more than \$600 from the "DOUBLE DOUBLER" Instant 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 Instant Ticket Claim Period. All Instant Game prizes must be claimed within 180 days following the end of the Instant Game or within the applicable time period for certain eligible military personnel as set forth in Texas Government Code §466.408. Any prize not claimed within that period, and in the manner specified in these Game Procedures and on the back of each ticket, shall be forfeited.

2.8 Disclaimer. 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. An Instant Game ticket may continue to be sold even when all the top prizes have been claimed.

3.0 Instant Ticket Ownership.

A. Until such time as a signature is placed upon the back portion of an Instant Game ticket in the space designated, a ticket shall be owned by the physical possessor of said ticket. When a signature is placed on the back of the ticket in the space designated, the player whose signature appears in that area shall be the owner of the 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 ticket in the space designated. If more than one name appears on the back of the 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 Instant Game tickets and shall not be required to pay on a lost or stolen Instant Game ticket.

4.0 Number and Value of Instant Prizes. There will be approximately 11,040,000 tickets in the Instant Game No. 1206. The approximate number and value of prizes in the game are as follows:

Figure 2: GAME NO. 1206 - 4.0

Prize Amount	Approximate Number of Winners*	Approximate Odds are 1 in**
\$1	1,104,000	10.00
\$2	1,140,800	9.68
\$4	147,200	75.00
\$10	73,600	150.00
\$20	48,300	228.57
\$40	6,900	1,600.00
\$80	3,496	3,157.89
\$100	690	16,000.00
\$200	460	24,000.00
\$400	230	48,000.00
\$1,000	138	80,000.00

\*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 4.37. 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 tickets in the game may be increased or decreased at the sole discretion of the Texas Lottery Commission.

5.0 End of the Instant Game. The Executive Director may, at any time, announce a closing date (end date) for the Instant Game No. 1206 without advance notice, at which point no further tickets in that game may be sold. The determination of the closing date and reasons for closing the game will be made in accordance with the instant game closing procedures and the Instant Game Rules, 16 TAC §401.302(j).

6.0 Governing Law. In purchasing an Instant Game ticket, the player agrees to comply with, and abide by, these Game Procedures for Instant Game No. 1206, 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-200902133  
 Kimberly L. Kiplin  
 General Counsel  
 Texas Lottery Commission  
 Filed: June 1, 2009



Instant Game Number 1207 "Spicy 7's"

1.0 Name and Style of Game.

A. The name of Instant Game No. 1207 is "SPICY 7'S". The play style for this game is "row/column/diagonal".

1.1 Price of Instant Ticket.

A. Tickets for Instant Game No. 1207 shall be \$1.00 per ticket.

1.2 Definitions in Instant Game No. 1207.

A. Display Printing - That area of the instant game 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 ticket.

C. Play Symbol - The printed data under the latex on the front of the instant 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: 2, 3, 4, 5, 6, 7, 8, 9, \$1.00, \$2.00, \$4.00, \$5.00, \$10.00, \$20.00, \$40.00, \$50.00, \$100, \$500, and \$1,000.

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. 1207 - 1.2D**

<b>PLAY SYMBOL</b>	<b>CAPTION</b>
2	
3	
4	
5	
6	
7	
8	
9	
\$1.00	ONES\$
\$2.00	TWO\$
\$4.00	FOUR\$
\$5.00	FIVE\$
\$10.00	TEN\$
\$20.00	TWENTY
\$40.00	FORTY
\$50.00	FIFTY
\$100	ONE HUND
\$500	FIV HUND
\$1,000	ONE THOU

E. Serial Number - A unique 14 (fourteen) digit number appearing under the latex scratch-off covering on the front of the ticket. There will be a four (4)-digit "security number" which will be individually boxed and randomly placed within the number. The remaining ten (10) digits of the Serial Number are the Validation Number. The Serial Number is positioned beneath the bottom row of play data in the scratched-off play area. The Serial Number is for validation purposes and cannot be used to play the game. The format will be: 00000000000000.

F. Low-Tier Prize - A prize of \$1.00, \$2.00, \$4.00, \$5.00, \$10.00, or \$20.00.

G. Mid-Tier Prize - A prize of \$40.00, \$50.00, \$100, or \$500.

H. High-Tier Prize - A prize of \$1,000.

I. Bar Code - A 24 (twenty-four) 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 ticket.

J. Pack-Ticket Number - A 14 (fourteen) digit number consisting of the four (4) digit game number (1207), a seven (7) digit pack number, and a three (3) digit ticket number. Ticket numbers start with 001 and end with 150 within each pack. The format will be: 1207-0000001-001.

K. Pack - A pack of "SPICY 7'S" Instant Game tickets contains 150 tickets, packed in plastic shrink-wrapping and fanfolded in pages of five (5). Tickets 001 to 005 will be on the top page; tickets 006 to 010 on the next page; etc.; and tickets 146 to 150 will be on the last page with backs exposed. Ticket 001 will be folded over so the front of ticket 001 and 010 will be exposed.

L. Non-Winning Ticket - A ticket which is not programmed to be a winning ticket or a 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.

M. Ticket or Instant Game Ticket, or Instant Ticket - A Texas Lottery "SPICY 7'S" Instant Game No. 1207 ticket.

2.0 Determination of Prize Winners. The determination of prize winners is subject to the general ticket validation requirements set forth in Texas Lottery Rule §401.302, Instant Game Rules, these Game Procedures, and the requirements set out on the back of each instant ticket. A prize winner in the "SPICY 7'S" Instant Game is determined once the latex on the ticket is scratched off to expose 10 (ten) Play Symbols. If a player reveals three (3) "7" play symbols in any one row, column or diagonal, the player wins the PRIZE. No portion of the display printing nor any extraneous matter whatsoever shall be usable or playable as a part of the Instant Game.

2.1 Instant Ticket Validation Requirements.

A. To be a valid Instant Game ticket, all of the following requirements must be met:

1. Exactly 10 (ten) Play Symbols must appear under the latex overprint on the front portion of the 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 ticket shall be intact;
6. The Serial Number, Retailer Validation Code and 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 ticket;
8. The ticket must not have a hole punched through it, be mutilated, altered, unreadable, reconstituted, or tampered with in any manner;
9. The ticket must not be counterfeit in whole or in part;
10. The ticket must have been issued by the Texas Lottery in an authorized manner;
11. The ticket must not have been stolen, nor appear on any list of omitted tickets or non-activated tickets on file at the Texas Lottery;
12. The Play Symbols, Serial Number, Retailer Validation Code, and Pack-Ticket Number must be right side up and not reversed in any manner;
13. The ticket must be complete and not miscut, and have exactly 10 (ten) Play Symbols under the latex overprint on the front portion of the ticket, exactly one Serial Number, exactly one Retailer Validation Code, and exactly one Pack-Ticket Number on the ticket;
14. The Serial Number of an apparent winning ticket shall correspond with the Texas Lottery's Serial Numbers for winning tickets, and a ticket with that Serial Number shall not have been paid previously;
15. The ticket must not be blank or partially blank, misregistered, defective, or printed or produced in error;
16. Each of the 10 (ten) Play Symbols must be exactly one of those described in Section 1.2.C of these Game Procedures;
17. Each of the 10 (ten) Play Symbols on the ticket must be printed in the Symbol font and must correspond precisely to the artwork on file at the Texas Lottery; the 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 Pack-Ticket Number must be printed in the Pack-Ticket Number font and must correspond precisely to the artwork on file at the Texas Lottery;
18. The display printing on the ticket must be regular in every respect and correspond precisely to the artwork on file at the Texas Lottery; and
19. The ticket must have been received by the Texas Lottery by applicable deadlines.

B. The 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 Instant Game 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 ticket. In the event a defective ticket is purchased, the only responsibility or liability of the Texas Lottery shall be to replace the defective ticket with another unplayed ticket in that Instant Game (or a ticket of equivalent sales price from any other current Instant Lottery game) or refund the retail sales price of the ticket, solely at the Executive Director's discretion.

#### 2.2 Programmed Game Parameters.

- A. Consecutive non-winning tickets will not have identical play data, spot for spot.
- B. No ticket will contain three or more of a kind other than the 7 symbol.

#### 2.3 Procedure for Claiming Prizes.

A. To claim a "SPICY 7'S" Instant Game prize of \$1.00, \$2.00, \$4.00, \$5.00, \$10.00, \$20.00, \$40.00, \$50.00, \$100, or \$500, a claimant shall sign the back of the ticket in the space designated on the ticket and present the winning 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 ticket; provided that the Texas Lottery Retailer may, but is not required, to pay a \$40.00, \$50.00, \$100, or \$500 ticket. 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 "SPICY 7'S" Instant Game prize of \$1,000, the claimant must sign the winning ticket and 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 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 "SPICY 7'S" Instant Game prize, the claimant must sign the winning ticket, thoroughly complete a claim form, and mail both to: Texas Lottery Commission, Post Office Box 16600, Austin, Texas 78761-6600. The risk of sending a ticket remains with the claimant. 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 a sufficient amount from the winnings of a person who has been finally determined to be:

1. delinquent in the payment of a tax or other money collected by the Comptroller of Public Accounts, the Texas Workforce Commission, or Texas Alcoholic Beverage Commission;
2. delinquent in making child support payments administered or collected by the Office of the Attorney General;
3. delinquent in reimbursing the Texas Health and Human Services Commission for a benefit granted in error under the food stamp program or the program of financial assistance under Chapter 31, Human Resources Code;
4. in default on a loan made under Chapter 52, Education Code; or
5. in default on a loan guaranteed under Chapter 57, Education Code.

D. 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.

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 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 of less than \$600 from the "SPICY 7'S" Instant 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 more than \$600 from the "SPICY 7'S" Instant 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 Instant Ticket Claim Period. All Instant Game prizes must be claimed within 180 days following the end of the Instant Game or within the applicable time period for certain eligible military personnel as set forth in Texas Government Code §466.408. Any prize not claimed within that period, and in the manner specified in these Game Procedures and on the back of each ticket, shall be forfeited.

2.8 Disclaimer. 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. An Instant Game ticket may continue to be sold even when all the top prizes have been claimed.

3.0 Instant Ticket Ownership.

A. Until such time as a signature is placed upon the back portion of an Instant Game ticket in the space designated, a ticket shall be owned by the physical possessor of said ticket. When a signature is placed on the back of the ticket in the space designated, the player whose signature appears in that area shall be the owner of the 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 ticket in the space designated. If more than one name appears on the back of the 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 Instant Game tickets and shall not be required to pay on a lost or stolen Instant Game ticket.

4.0 Number and Value of Instant Prizes. There will be approximately 12,000,000 tickets in the Instant Game No. 1207. The approximate number and value of prizes in the game are as follows:

Figure 2: GAME NO. 1207 - 4.0

Prize Amount	Approximate Number of Winners*	Approximate Odds are 1 in**
\$1	1,040,000	11.54
\$2	1,200,000	10.00
\$4	240,000	50.00
\$5	80,000	150.00
\$10	80,000	150.00
\$20	40,000	300.00
\$40	5,000	2,400.00
\$50	2,500	4,800.00
\$100	2,000	6,000.00
\$500	250	48,000.00
\$1,000	150	80,000.00

\*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 4.46. 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 tickets in the game may be increased or decreased at the sole discretion of the Texas Lottery Commission.

5.0 End of the Instant Game. The Executive Director may, at any time, announce a closing date (end date) for the Instant Game No. 1207 without advance notice, at which point no further tickets in that game may be sold.

6.0 Governing Law. In purchasing an Instant Game ticket, the player agrees to comply with, and abide by, these Game Procedures for Instant Game No. 1207, 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-200902134

Kimberly L. Kiplin  
General Counsel  
Texas Lottery Commission  
Filed: June 1, 2009

The Texas Lottery Commission has determined that information that is confidential by law, because it goes to the security of the lottery, is contained within the procedure referenced below. The confidential information has been redacted within this procedure.



Office of the Controller, Lotto Texas® Jackpot Estimation  
Procedure



# TEXAS LOTTERY COMMISSION

## OFFICE OF THE CONTROLLER

### PROCEDURE

<b>Number:</b> OC-JE-002	<b>Title:</b> <i>Lotto Texas</i> ® Jackpot Estimation	<b>Approval:</b> Texas Lottery Commission
<b>Page:</b> 1 of 8		
<b>Effective Date:</b>	<b>Approval Date:</b>	<b>Review Date:</b>

#### PROCEDURE NUMBER

OC-JE-002 [Supersedes OC-JE-002 effective October 29, 2008]

#### PURPOSE

To provide standard guidelines for projecting and estimating sales for future *Lotto Texas* estimated annuitized jackpot prize amounts that will be advertised.

#### SCOPE

This procedure applies to the Office of the Controller, the Lottery Operations Division, and the Executive Division.

#### RESPONSIBILITY

This procedure is primarily the responsibility of the Controller, Financial Operations Manager, Lottery Operations Director, Lottery Products Manager, the Deputy Executive Director, the Executive Director, and designated jackpot team personnel (jackpot team) in the Office of the Controller and the Lottery Products Department. The final approval for the estimated annuitized jackpot to advertise will be provided by the Executive Director.

#### GENERAL

The Texas Lottery Commission (TLC) jackpot team ensures that *Lotto Texas* sales and other information necessary to estimate the jackpot amount to be advertised is gathered so the Controller, the Lottery Products Manager and the Lottery Operations Director, or their designee(s) may review and recommend estimates and projections that will be presented to the Deputy Executive Director and the Executive Director, or their designee(s). The Executive Director, or their designee, has the sole authority to approve the final projected estimated annuitized jackpot to advertise for *Lotto Texas* Drawings.

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The “Lotto Texas” On-Line Game rule is found in the Texas Administrative Code, Title 16, Part 9, Chapter 401, Subchapter D, Rule 401.305. The Lotto Texas Game rule states, “The jackpot prize for a drawing is the greater of 40.47 percent of the proceeds from Lotto Texas ticket sales for all drawings in the roll cycle and any earnings on an investment of all or part of the sales proceeds, paid in 25 annual installments; or the amount advertised in accordance with subsection (e) of the Lotto Texas On-Line Game Rule as the estimated jackpot for the drawing, paid in 25 annual installments.”

A roll cycle is a series of drawings that ends when there is a drawing for which one or more tickets are sold that match the six numbers drawn in the drawing. A new roll cycle begins with the next drawing after a drawing for which one or more jackpot tickets are sold that match the six numbers drawn in the drawing.

The advertised amount shall be an amount payable in 25 annual installments. To the extent that the advertised amount is based on projected sales, the projections shall be fair and reasonable. The Executive Director, or designee, may approve an increase in the amount of the jackpot originally advertised for a drawing if the increase is supported by reasonable sales projections. The Lottery Products Department will be responsible for notifying all necessary personnel and/or vendors.

**REFERENCE**

OC-JE-005, *Lotto Texas* Jackpot Payment and Investment

**PROCEDURE**

**I. Timeline**

1. The completed *Lotto Texas* Jackpot Estimation Worksheet shall be presented to the Executive Director no later than 4:00 p.m. on Wednesdays and Fridays.
2. In the event there is a delay in presenting the worksheet to the Executive Director, the jackpot team shall immediately determine the cause for the delay and inform each member of the jackpot estimation team of the cause for the delay.
3. Distribution of estimated jackpot information as outlined in Section VI shall be completed by close of business, or 5:00 p.m. on Wednesdays and Fridays.
4. The advertised jackpot for the current draw may be increased based on revised sales projections, if the Executive Director, or their designee, determines that sales have grown sufficiently to support an increased advertised jackpot. The Executive Director, or their designee, will be consulted regarding the time frame for increasing the advertised jackpot amount.
5. In the event Wednesday or Friday falls on a holiday and management has agreed that the sales trends and jackpot levels are such that an early estimation may be achieved, or if, due to a large jackpot level, a Friday estimation is delayed until Saturday, the above deadlines may be revised as needed.

**II. Compile Estimate Information:**

1. Determine the Interest Factor: Investment cost information is obtained from the Texas Treasury Safekeeping Trust Company by designated Controller staff and approved by Financial Operations Manager prior to each estimation. Controller staff requests the estimated cost of 25 annual payments to yield the advertised jackpot. The interest



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factor is calculated by dividing the advertised jackpot by the estimated cost, including the initial payment required, to fund an investment stream that would yield the total advertised jackpot over a 25-year period. Note that the investment information may not be obtainable if the appropriate financial institutions and/or brokers are not open for business such as on business holidays. In those instances either a request for the information is made the day before or the prior estimation interest factor is used.

█ Compile actual draw sales for the current drawing: Draw sales for each *Lotto Texas* drawing are recorded both on the █  
█  
█

**III. Estimate the Sales and Jackpot Support for the Current and Future Draws:**

The Office of the Controller and the Lottery Products Department will independently estimate draw sales and jackpot support for the current *Lotto Texas* drawing and project the jackpot to be advertised for the next drawing in the event of a roll. Estimations may be made on a day prior to Wednesday or Friday if Wednesday or Friday fall on a holiday and management has agreed that the sales trends and jackpot levels are such that an early estimation may be achieved. If the estimation is completed prior to the holiday, at least one member of the estimation team will review sales prior to the drawing for changes in *Lotto Texas* sales or other factors that may impact jackpot prize support. If a revision to the advertised jackpot on the day of estimation or the day of the drawing is necessary, management or their designee(s) will be contacted.

1. Project the *Lotto Texas* draw sales for the current drawing: Estimations are made each Wednesday and Friday. If the draw day is on a Wednesday, estimate sales for that Wednesday. If the draw day is on a Saturday, estimate sales for Friday and Saturday. However, jackpot estimations may be updated at any time if either of the Lottery Products or Controller staff believe that changes in *Lotto Texas* sales or other factors may impact jackpot prize support. Estimate draw sales by using historical sales data and other relevant factors that may impact sales. Combine the actual draw sales to date with the projected draw sales for the remainder of the draw period to calculate the total projected draw sales.
  - a) Evaluate historical sales data: Project the current draw day sales by estimating the expected increase/decrease in sales using the hourly sales trend and/or growth pattern for previous like-day drawings. Hourly sales information for Wednesday and Friday are available from █.
  - b) Other factors to consider in estimating draw sales, along with evaluating historical sales data, include but are not limited to:
    - Wednesday draw sales are generally lower than Saturday draw sales.
    - length of time since a large jackpot was advertised

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- effect of holidays (Holidays generally cause sales to peak early and then fall below average on the holiday.)
- weather throughout the state, especially in key markets
- sales trends for like jackpots and/or most recent roll cycles
- current advertising/promotions schedule
- relevant media issues
- on-line terminal connection problems
- jackpots advertised in neighboring states and similar games such as Mega Millions
- new on-line game launches or other game enhancements
- overall trends in sales over similar time periods
- other - IRS deadlines, spring break, strength of the economy, etc.

It is not necessary to evaluate all these factor for every estimate. Sound judgment should be used in determining which factors to consider.

2. Evaluate Sales Support for the Current Advertised Jackpot: Determine the projected *Lotto Texas* jackpot sales support given the current advertised jackpot.
  - a) If sales proceeds and the *Lotto Texas* prize reserve fund, if applicable, are not sufficient to pay a jackpot prize, the TLC shall use funds from other authorized sources, including the State Lottery Account as identified in Government Code, Section 466.355.
  - b) The advertised jackpot for the current draw may be increased prior to the draw based on revised sales projections, if the Executive Director, or their designee, determines that sales have grown sufficiently to support an increased advertised jackpot.
3. Estimate sales for the next draw in the event of a rollover: To estimate sales for the next draw, use historical sales data and any other relevant information as described in 1.a) and 1.b) above.
4. Project a range of prospective estimated annuitized jackpot prize amounts that may be advertised in the event of a rollover: Use estimated draw sales for the current draw, estimated draw sales for the next draw, and the estimated interest factor to identify a range of prospective estimated annuitized jackpot prize amounts.
  - a) The estimated annuitized jackpot prize amount will automatically be set to four million dollars for the first draw following a draw in which at least one jackpot prize ticket is identified.
  - b) The range of projected estimated annuitized jackpot amounts to advertise in the event of a rollover should reflect at least one million dollars greater than the current advertised jackpot.

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- c) Controller staff will complete a checklist to verify that all prior information is correct and that all of the required steps have been completed.

**IV. Approval of Estimated Annuitized Jackpot Amount to Advertise:**

1. Office of the Controller and Lottery Products Department personnel should consult with each other regarding the most fair and reasonable sales projections and other factors which may impact jackpot prize support for the estimated annuitized jackpot amount to advertise. Office of the Controller and Lottery Products Department staff will agree on a negotiated sales projection and this information will be presented to the Controller, the Products Manager and Lottery Operations Director or their designee(s), for their independent recommendations to the Deputy Executive Director and the Executive Director. In the event that any member of the above authorized staff is unavailable to sign the jackpot estimation worksheet in person, then approval of the projected estimated annuitized jackpot amount to advertise in the event of a rollover can be authorized and documented by email, pager or phone. Temporary signature authority may be designated to appropriate personnel that will be accountable for jackpot estimation approval. Additionally, this temporary signature authority designation may be granted to an individual on this list of authorized signatures reflected above. For example, the Lottery Operations Director may grant temporary signature authority to the Products Manager thus resulting in two signatures from the Products Manager. Temporary signature authorization is to be in writing, by email or pager, and should specify the effective length of time. Documentation of such approval or delegation shall be kept with the estimation file maintained by Lottery Products Department and a copy of the documentation should be provided to each member of the jackpot estimation team.
  - a) The recommendation of the jackpot amount to advertise in the event of a rollover should typically be based on the “low end” sales support shown at the time of estimation, however, for marketing related purposes there may be instances when the recommended jackpot could be based on an amount exceeding the “high end” sales support.
  - b) The range of potential jackpots to advertise in the event of a rollover should be used by management as a tool to understand the amount of additional funds that may be required to fund the jackpot prize. In the event that “low end” sales do not support a roll from the currently advertised jackpot, the TLC will roll the jackpot in \$1 million increments.
2. In the event one of the authorized staff (Controller, Products Manager or Lottery Operations Director) identified in Section IV.1. is unavailable for signature authority and temporary signature authority cannot be obtained by 4:00 p.m., the matter shall be brought to the attention of the Deputy Executive Director, Executive Director, or person in charge of the agency by Executive Order (in that order), who shall appoint one of the authorized staff identified in Section IV.1. to act instead of the unavailable signatory. The temporary signature authority should be designated to appropriate personnel that will be accountable for jackpot estimation approval.

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3. The recommended jackpot amount to advertise is then presented to the Deputy Executive Director for review and concurrence or disagreement, and ultimately to the Executive Director for final approval of the subsequent (annuitized) jackpot prize amount that will be advertised in the event of a *Lotto Texas* jackpot rollover. The *Lotto Texas Jackpot Estimation Worksheet* presented will state the projected current (annuitized) jackpot prize amount for the current draw. In the event that any member of the above authorized staff is unavailable to sign the worksheet in person, then approval can be authorized and documented by email, pager or phone. Temporary signature authority for the Deputy Executive Director and the Executive Director may be designated to appropriate personnel other than those individuals listed above in Section IV.1 that will be accountable for jackpot estimation approval. Temporary signature authorization is to be in writing, by email or pager, and should specify the effective length of time. Documentation of such approval or delegation shall be kept with the estimation file maintained by Lottery Products Department and a copy of the documentation should be provided to each member of the jackpot estimation team.
  
4. In the event the Deputy Executive Director or the Executive Director is not available, the matter shall be brought to the attention of the Executive Director or Deputy Executive Director or their designee(s). The Deputy Executive Director or Executive Director shall appoint an authorized person other than those individuals identified in Section IV.1. to act instead of the unavailable signatory. In the event neither the Executive Director or their designee nor the Deputy Executive Director or their designee are available, the matter shall be brought to the attention of the person in charge of the agency by Executive Order who shall designate a substitute signature authority for the absent signatory authority that will be accountable for jackpot estimation approval. This will ensure the reliability and business continuity required for the advertisement of future prospective *Lotto Texas* estimated annuitized jackpot prize amount. Should this occur, the substitute signature authority event shall be documented and kept in the estimation file maintained by the Lottery Products Department and a copy of the documentation shall be provided to each member of the jackpot estimation team. The Internal Auditor, Chairman of the Commission, and each Commissioner should also be provided notification of the substitute signature authority event. Following this notification, documentation should also be placed in the estimation file maintained by the Lottery Products Department.

**V. Distribution of Estimated Jackpot Information on the Agency Website:**

1. The Office of Controller staff will perform the following:
  - a) After the Executive Director has approved an advertised estimated jackpot under subsection (e) of the *Lotto Texas* On-Line Game Rule, a member of the jackpot team will post the amount of ticket sales, if any, for previous drawings in the roll cycle, the amount of projected ticket sales for the upcoming drawing, investment information used to determine the advertised estimated jackpot, and other information used to determine the advertised estimated jackpot. This may be achieved by uploading a scan of the signed *Lotto Texas Jackpot Estimation Worksheet*.

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b) The interest factor calculated by the agency based on investment information obtained from the Texas Treasury Safekeeping Trust Company and used by the TLC to determine the advertised jackpot will be entered on the [REDACTED] screens for posting to the agency website.

c) The approved estimated jackpot for the next draw in the roll cycle and the approximate cash value of the estimated jackpot will be entered on the [REDACTED] screens for posting to the agency website and will be published after the draw if no jackpot tickets were sold.

d) In addition, the approximate cash value of the jackpot prize amount for four million dollars is entered on the advertised jackpot screens for posting to the agency website and publishing after the draw if a jackpot prize ticket is sold for a drawing.

**VI. Distribution of Estimated Jackpot Information:**

1. The On-Line Product Specialist or designee:

a) Fills in the approved estimated annuitized jackpot prize amount and the associated approximate cash value amount for the next drawing on the [REDACTED]. In addition, the approximate cash value for the annuitized four million dollar starting jackpot amount is also filled in. This form is used to notify the Lottery Operator of the estimated annuitized jackpot prize amount and the associated approximate cash value for the next drawing.

b) Faxes a copy of the [REDACTED] to the Lottery Operator for processing.

c) Enters the estimated annuitized jackpot prize amount to be advertised in the event of a rollover, the associated approximate cash value for the annuitized amount and the current interest factor, in the [REDACTED] screens. The application is used to disseminate estimated annuitized jackpot information and the associated approximate cash value amount to the agency website as well as to pertinent TLC staff.

d) If the application is not functioning and the dissemination of the roll amount cannot be automatically sent, the [REDACTED] form must be physically delivered to the Texas Lottery Computer Room so the agency website can be updated by Information Resources after the drawing results are finalized. Before 5:00 p.m., an e-mail message must be sent to pertinent TLC and vendor staff to notify them of the jackpot prize amount that will be advertised in the event of a rollover.

e) Calls the Lottery Operator's control room to verify receipt of the fax and to confirm that the *Lotto Texas* estimated annuitized jackpot prize amount and the approximate cash value is legible. The name of the Lottery Operator staff member and time and date the verification took place shall be kept in the estimation file maintained by the Lottery Products Department.

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- f) Sends a voicemail broadcast message to pertinent TLC and vendor staff, notifying them of the estimated annuitized jackpot prize amount that will be advertised in the event of a rollover.
2. The Office of Controller staff will email the final and approved jackpot estimation worksheet to the Internal Audit Department, the Legislative Budget Board and the Governor's Office.
- a) Internal Audit Department Contacts:  
Assigned Internal Audit Contact – (contact name)@lottery.state.tx.us
  - b) Legislative Budget Board Contacts:  
Assigned Budget Analyst - (analyst name)@lbb.state.tx.us  
Assigned Revenue Analyst – (analyst name)@lbb.state.tx.us.
  - c) Governor's Office Contact:  
Assigned Analyst, Governor's Advisor Budget Planning and Policy, (analyst name)@governor.state.tx.us

**VII. Distribution of information when the current advertised jackpot prize amount is changed:**

If the estimated annuitized jackpot prize amount that is currently advertised is changed prior to the drawing, Lottery Products Department personnel will update the outdoor billboards with the new *Lotto Texas* estimated annuitized jackpot prize amount to advertise and will also contact the advertising agency(s) and the Lottery Operator control room. Media Relations will notify the media that there is a new estimated annuitized jackpot prize amount being advertised.

TRD-200902071  
Kimberly L. Kiplin  
General Counsel  
Texas Lottery Commission  
Filed: May 29, 2009

The Texas Lottery Commission has determined that information that is confidential by law, because it goes to the security of the lottery, is contained within the procedure referenced below. The confidential information has been redacted within this procedure.



Office of the Controller, Lotto Texas® Jackpot Payment and Investment Procedure



# TEXAS LOTTERY COMMISSION

## OFFICE OF THE CONTROLLER

### PROCEDURE

<b>Number:</b> OC-JE-005	<b>Title:</b> <i>Lotto Texas</i> <sup>TM</sup> Jackpot Payment and Investment	<b>Approval:</b> Texas Lottery Commission
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#### PROCEDURE NUMBER

OC-JE-005 [Supersedes OC-WP-003 effective April 27, 2006]

#### PURPOSE:

This procedure outlines steps to be taken after a *Lotto Texas*<sup>TM</sup> drawing in which a *Lotto Texas*<sup>TM</sup> jackpot (first prize) ticket is sold.

#### SCOPE:

This procedure applies to Office of the Controller personnel and the Comptroller of Public Accounts through the Texas Treasury Safekeeping Trust Company (TTSTC)<sup>1</sup>.

#### RESPONSIBILITY:

Office of the Controller personnel, including authorized signatories designated by the Controller, are responsible for administering this procedure.

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<sup>1</sup> TTSTC exists and functions by virtue of Subchapter G, Chapter 404, Texas Government Code, and is empowered to manage, disburse, transfer, safekeep, and invest funds and securities as provided by statute or belonging to the State, agencies and local political subdivisions of the State. TTSTC is responsible for submitting requests for trade inquiries, and investment purchases from investment firms that have been approved by TTSTC and/or the Comptroller of Public Accounts. Reference: Texas Government Code §466.403 Payment of Prizes in Installments.

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**GENERAL:**

Under the “Lotto Texas” On-Line Game Rule, a person may, at the time of making a play, select the option for payment of the cash value of a share of the jackpot if the play is a winning play. Except as provided below, a person who is entitled to a share of a jackpot prize and who did not opt to receive the cash value of the jackpot prize shall receive payment in 25 annual installments. If a person would otherwise receive total installment payments of \$2 million or less, the Texas Lottery Commission (TLC) shall pay the person, upon completion of all validation procedures, a single payment in the amount of the cash value of those total installment payments. The cash value is the cost on the first business day after the applicable drawing of funding those installment payments. Upon Lotto Texas jackpot results reporting one or more tickets sold with a matching combination of numbers, and when indicated, Controller personnel will contact the Comptroller of Public Accounts acting by and through TTSTC, on the following working day (trade date).

The roll cycle is a series of drawings that ends when there is a drawing for which one or more tickets are sold that match the six numbers drawn in the drawing. A new roll cycle begins with the next drawing after a drawing for which one or more jackpot tickets are sold that match the six numbers drawn in the drawing.

The first business day after the Lotto Texas drawing, the [REDACTED] will be provided by Information Technology. The [REDACTED] will identify the payment option(s) chosen at the time of purchase. The Pool Snapshot from the OLPM will identify the percentage of sales applicable to the jackpot prize. The [REDACTED] will be emailed by the lottery operator to the TLC as secondary reports to reflect the information from the prize ticket(s).

Ref: 16 Texas Administrative Code §401.305 “Lotto Texas” On-Line Game Rule.

**PROCEDURE:**

The jackpot prize for a drawing is the greater of 40.47 percent of the proceeds from Lotto Texas ticket sales for all drawings in the roll cycle and any earnings on an investment of all or part of the proceeds from ticket sales, paid in 25 annual installments; or the amount advertised in accordance with subsection (e) of the Lotto Texas On-Line Game Rule as the estimated jackpot for the drawing, paid in 25 annual installments.

If sales proceeds and the Lotto Texas prize reserve fund are not sufficient to pay a jackpot prize, the TLC shall use funds from other authorized sources, including the State Lottery Account as identified in Government Code, Section 466.355.

TTSTC will provide upon request either a “Lottery Prize Schedule” or a “Lottery Financing Calculator.” Either report supplies the necessary information to calculate the cost of investment or the cash value. The Lottery Prize Schedule may be provided to reflect the purchase of a stream of investments.



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Description	Lottery Prize Schedule	Lottery Financing Calculator
Amount to be invested for 24 years.	Payment (column total)	Cost of Zeros
Initial Installment	Initial Payment	Cash Payment
Additional sales contribution available. (To be added to the initial installment.)	Difference between the sum of the invested amount over 24 years plus the initial payment compared to the total sales contribution for the jackpot prize.	Difference between the sum of the invested amount over 24 years plus the cash payment compared to the total sales contribution for the jackpot prize.

Review of the annuity & cash value estimate and use of the information to complete the Lotto Texas Drawing Results & Reserve Entry Form: The available sales contribution for the jackpot prize is found on the [REDACTED] screen for Lotto Texas. If the "Total Cost of 25 Payments" is less than the "Amount Available," the difference "Additional Sales Contribution," is added to the jackpot prize amount. If the "Total Cost of 25 Payments" is more than the "Amount Available," the difference is paid from the reserve or from other authorized sources, including the State Lottery Account as identified in Government Code, Section 466.355.

**1. The annual payments option paid in one payment:**

- 1.1. If it appears that the funds may not be sufficient to pay each share of the jackpot prize in an amount greater than \$2 million, the designated employee will request an annuity & cash value estimate to yield the advertised jackpot from TTSTC on the first working day following the Lotto Texas drawing. If it is determined that the cash value of each share is less than the amount required to pay a prize over 25 years *equal to or less than \$2 million*, the prize will be paid, upon completion of all validation procedures, in a single payment in the amount of the cash value of those total installment payments. The cash value is the cost on the first business day after the applicable drawing of funding those installment payments. Because the prize will be paid in a single payment, do not return a signed annuity & cash value estimate to TTSTC.
- 1.2. The designated employee will review the annuity & cash value estimate and use the information to complete the Lotto Texas Drawing Results & Reserve Entry Form. The sales contribution for the jackpot prize is found on the [REDACTED] screen for Lotto Texas. If the "Total Cost of 25 Payments" is less than the "Amount Available," the difference "Additional Sales Contribution," is added to the jackpot prize amount. If the "Total Cost of Prizes" is more than the "Amount Available," the difference is paid from the reserve or from other authorized sources, including the State Lottery Account as identified in Government Code, Section 466.355.
- 1.3. The designated employee will provide the annuity & cash value estimate, the [REDACTED] and the signed Lotto Texas Drawing Results &

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Reserve Entry Form to the Controller or other authorized signatory. The Controller or other authorized signatory will review the information for completeness and accuracy and will sign the form.

1.4. Until such time as the Lotto Texas prize reserve fund is depleted, the designated employee will update the Lotto Texas Prize Reserve spreadsheet using the information on the [REDACTED] and the information on the Lotto Texas Drawing Results & Reserve Entry Form. This step must be completed for all Lotto Texas drawings. See addendum for information acquired from the [REDACTED]. The Lotto Texas Drawing Results & Reserve Entry Form provides the amount of funds taken from the prize reserve or from other authorized sources including the State Lottery Account to fund the jackpot prize.

**2. The annual payments option paid in 25 installments:**

2.1. If it is determined that each share of the annuitized jackpot prize may provide a total payment stream for 25 installments greater than \$2 million, including any additional sales contribution, the designated employee will request an annuity purchase from TTSTC on the first working day following the Lotto Texas drawing. TTSTC shall be instructed to purchase an investment stream that will provide an initial payment plus 24 subsequent annual payments that will yield a total prize that is equal to the advertised jackpot. In the event that funds are sufficient to pay a jackpot prize that is greater than the advertised amount, additional sales may be added to the initial payment.

2.2. If more than one jackpot prize ticket is sold and the prize per share does not divide equally by the number of shares, it is preferable, to purchase separate investments for each jackpot prize ticket sold. Due to 16 Texas Administrative Code Game Rule §401.310 Payment of Prize Payments upon Death of Prize Winner a sale of an annuity may be approved by the Commission. Therefore, the annuity will need to be divided equally among all shares in the event the Commission needs to sell a separate share.

2.3. TTSTC will provide, by facsimile or other acceptable method, the Lottery Prize Schedule to the designated employee. The schedule should reflect the par value over 24 years, the first maturity year following the date of the draw, and the cost of each investment. The designated employee and an authorized signatory will review the schedule for completeness. To complete the purchase, the document must be signed by an authorized signatory and returned to TTSTC promptly.

2.4. The designated employee will complete the Lotto Texas Drawing Results & Reserve Entry Form. Once completed, the designated employee will provide the Lottery Prize Schedule, the [REDACTED], and the signed Lotto Texas Drawing Results & Reserve Entry Form to the Controller or other authorized signatory. The Controller or other authorized signatory will review the information for completeness and accuracy and will sign the form.

2.5. Until such time as the Lotto Texas prize reserve fund is depleted, the designated employee shall update the Lotto Texas Prize Reserve spreadsheet using the information on the [REDACTED] and the information on the Lotto Texas Drawing Results

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& Reserve Entry Form. This step must be completed for all Lotto Texas drawings. See addendum for information acquired from the [REDACTED]. The Lotto Texas Drawing Results & Reserve Entry Form provides the amount of funds taken from the prize reserve or from other authorized sources including the State Lottery Account to fund the jackpot prize.

2.6. The first installment payment shall be made upon completion of commission validation procedures. The subsequent 24 installment payments shall be made annually on or about the 15th day of the month in which the applicable drawing occurred. The second through 24th installment payments shall be in equal amounts. The first installment payment may be equal to or higher than the subsequent installment payments.

**3. The Cash Value Option calculation:**

3.1. The prize will be paid, upon completion of all validation procedures, in a single payment in the amount of the cash value of those total installment payments. The designated employee will request an annuity & cash value estimate (non-purchase) from TTSTC the first working day following the Lotto Texas drawing. Do not return the signed annuity & cash value estimate to TTSTC. The prize amount will be a share of 40.47 percent of total sales for the roll cycle; or the cost on the day after the drawing of funding a share of installment payments.

3.2. The designated employee will review the annuity & cash value estimate to complete the Lotto Texas Drawing Results & Reserve Entry Form. If the "Cost of 25 Payments" is less than the "Amount Available", the difference "Additional Sales Contribution" is added to the jackpot prize amount. If the "Total Cost of 25 Payments" is more than the "Amount Available," the difference is paid from the Lotto Texas prize reserve or from other authorized sources, including the State Lottery Account as identified in Government Code, Section 466.355.

3.3. The designated Office of the Controller employee will provide the annuity & cash value estimate, the [REDACTED], and the signed Lotto Texas Drawing Results & Reserve Entry Form to the Controller or other authorized signatory. The Controller or other authorized signatory will review the information for completeness and accuracy and sign the form.

3.4. Until which time as the Lotto Texas prize reserve fund is depleted, the designated employee will update the Lotto Texas Prize Reserve spreadsheet using the information on the [REDACTED] and the information on the Lotto Texas Drawing Results & Reserve Entry Form. This step must be completed for all Lotto Texas drawings. See addendum for information acquired from the [REDACTED]. The Lotto Texas Drawing Results & Reserve Entry Form provides the amount of funds taken from the prize reserve or other authorized sources including the State Lottery Account to fund the jackpot prize.

<b>Number:</b> OC-JE-005	<b>Title:</b> <i>Lotto Texas™</i> Jackpot Payment and Investment	<b>Approval:</b> Texas Lottery Commission
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<b>Effective Date:</b>	<b>Date:</b>	<b>Review Date:</b>

**4. The Combination of CVO and annual payments option:**

- 4.1. If more than one jackpot prize ticket is sold and if the tickets include at least one annual payment option ticket and one cash value option ticket refer to instructions in “B” above for payment of all annual payment shares and refer to “C” above for payment of all CVO shares.
- 4.2. A separate annuity & cash value estimate from TTSTC will not be requested for the cash value calculation. The Lottery Prize Schedule provided by TTSTC for the purchase of the annual payment option(s) will be used to determine the cash value.

**5. For all Lotto Texas drawings in which a jackpot prize ticket is sold:**

- 5.1. After each drawing, the [REDACTED] system will send an update to the general ledger to reflect any reductions in the prize reserve fund, used to pay the guaranteed fourth prize. If a transfer from the reserve is required to fund the jackpot prize category, a manual general ledger entry must be made by a designated general ledger employee. The designated employee will provide the Lotto Texas Drawing Results & Reserve Entry Form and the [REDACTED] screen to the designated general ledger staff for each drawing in which a jackpot prize ticket is sold.
- 5.2. The Lotto Texas Drawing Results & Reserve Entry Form, the [REDACTED], the Lottery Prize Schedule or the annuity & cash value estimate from TTSTC, and any other related prize calculation paperwork will be provided to the prize payment staff.
- 5.3. The designated employee will send an e-mail to inform certain lottery staff on the Jackpot Information e-mail distribution list, of the number of jackpot prize tickets sold for the drawing, the payment method(s) selected, the initial payment, the subsequent 24 payments (if applicable), and/or the total jackpot prize amount, the date of subsequent payments (if applicable), the advertised jackpot amount, and the amount of the bonus to be received by the qualifying retailer(s).
- 5.4. The TLC will pay a bonus of one percent (1%) of the Lotto Texas advertised jackpot or the jackpot based on sales (advertised plus additional sales contribution), whichever is greater, up to \$500,000 for any drawing, to the retailer(s) who sell(s) the jackpot-winning ticket(s). The one percent Lotto Texas retailer bonus is pari-mutuel. That is, should there be multiple jackpot winners with winning tickets sold by more than one retailer, the one percent bonus will be divided equally between the retailers.

**Winner Payment Processing**

Refer to procedure OC-WP-001, **Processing Prize Payments**.

Once the jackpot prize ticket has passed the internal validation process, the ticket is declared a valid winning ticket and the winner is declared. The designated prize payment employee prepares a Lotto Texas Payment Schedule based on the information obtained for the calculation of the prize. The schedule will be reviewed by the Controller or other

<b>Number:</b> OC-JE-005	<b>Title:</b> <i>Lotto Texas</i> <sup>TM</sup> Jackpot Payment and Investment	<b>Approval:</b> Texas Lottery Commission
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designated staff prior to distribution. The Lotto Texas Payment Schedule will be provided to the winner and the Products Department staff. A copy of the payment schedule will remain in the winner's file. If two or more jackpot prize tickets are sold, a payment schedule will be created for each jackpot prize winner.

**Addendum: Lotto Texas Prize Reserve fund**

The Lotto Texas prize reserve fund is composed of all reserve funds remaining based on the prior Lotto Texas game rules. The Lotto Texas prize reserve fund may be decreased if the cost of the advertised jackpot paid over 25 years is greater than the sales contribution for the jackpot prize level. The Lotto Texas prize reserve may also be decreased if the total liability for the fourth prize exceeds the sales contribution for the fourth prize level. The Lotto Texas prize reserve fund may be used only for the Lotto Texas game.

The prize amounts for each drawing paid to each Lotto Texas player who selects a matching combination of numbers for prize level one, two, and three will vary because they are pari-mutuel prizes. Prize category four is a guaranteed prize (fixed prize) of \$3.00.

The pari-mutuel prize amounts, except the jackpot prize amount, are based on the total amount in the prize level for the Lotto Texas drawing distributed equally over the number of matching combinations in each prize level. The calculation of pari-mutuel prize for levels two and three will automatically be calculated by [REDACTED]. An amount of exactly fifty cents shall be rounded up to the nearest whole dollar. Any part of the second or third prize for a drawing that is not paid in prizes shall be carried forward and shall become part of the second or third prize tiers, respectively, for the next drawing. Therefore, prize levels two and three will not impact the Lotto Texas prize reserve fund.

If proceeds from Lotto Texas ticket sales and the Lotto Texas prize reserve fund are not sufficient to pay all jackpot prizes or fourth level prizes for a draw, the commission shall use funds from other authorized sources, including the State Lottery Account as identified in Government Code, Section 466.355.

**Addendum: [REDACTED] Report**

- "Tot" sales are the total amount of sales for the current draw.
- "Level" is the prize level for all prizes in the current draw.
- The transfer of cash contribution from the reserve fund or other authorized sources for the fourth prize level is calculated as the funds available for the fourth prize level less total liability. The transfer of additional funds to the jackpot prize, if applicable, is obtained from Lotto Texas Drawing Results & Reserve Entry Form.
- The "sales contribution" for each prize level is the percentage of sales attributed to each prize level.
- "Tot Liability" is the total liability for each prize level which is the number of prize tickets sold multiplied by the prize amount.
- "Breakage" is the amount remaining in each prize level after all prizes are paid for the drawing.

TRD-200902072  
Kimberly L. Kiplin  
General Counsel  
Texas Lottery Commission  
Filed: May 29, 2009

◆ ◆ ◆  
**Office of the Controller, Winner Payment Processing and Review Procedure**

*(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 this document will not be included in the print version of the Texas Register. The figure is available in the on-line version of the June 12, 2009, issue of the Texas Register.)*

The Texas Lottery Commission has determined that information that is confidential by law, because it goes to the security of the lottery, is contained within the procedure referenced below. The confidential information has been redacted within this procedure.

TRD-200902073  
Kimberly L. Kiplin  
General Counsel  
Texas Lottery Commission  
Filed: May 29, 2009

◆ ◆ ◆  
**North Central Texas Council of Governments**

**Notice of Vendor Contract Award**

Pursuant to the provisions of Government Code, Chapter 2254, the North Central Texas Council of Governments publishes this notice of vendor contract award. The vendor proposal request appeared in the March 20, 2009, issue of the *Texas Register* (34 TexReg 2047). The selected vendor will design, manufacture, and deliver quality transit vehicles to support transportation services related to the Job Access/Reverse Commute (49 U.S.C. §5316) and New Freedom (49 U.S.C. §5317) federal grant programs.

The vendor selected for this project is Lasseter Bus & Mobility, 820 Office Park Circle, Lewisville, Texas 75057. The maximum amount of this contract is \$700,000.

TRD-200902193  
R. Michael Eastland  
Executive Director  
North Central Texas Council of Governments  
Filed: June 2, 2009

◆ ◆ ◆  
**Panhandle Regional Planning Commission**

**Request for Proposals**

The Panhandle Regional Planning Commission (PRPC) is seeking proposals for a leased facility to house the Workforce Solutions Panhandle office in Pampa, Texas. The space should offer approximately 2,500 to 4,000 square feet of contiguous space that can be appropriately configured for business/professional use. The office is currently located at 1327 N. Hobart.

A copy of the Request for Proposals can be obtained by contacting Leslie Hardin, PRPC's Workforce Development Facilities Coordinator

at (806) 372-3381 or lhardin@theprpc.org. Proposals must be received at PRPC by 3:00 p.m. on July 6, 2009.

TRD-200902190  
Leslie Hardin  
Workforce Development Facilities, Training and Support Coordinator  
Panhandle Regional Planning Commission  
Filed: June 2, 2009

◆ ◆ ◆  
**Texas Parks and Wildlife Department**

**Notice of Availability and Opportunity for Comment**

An Environmental Assessment for construction and operation of a new fish hatchery in Jasper County below Sam Rayburn Reservoir, just east of McGee Bend, has been prepared by the Texas Parks and Wildlife Department.

This is a Sport Fish Restoration project to be funded jointly by Texas Parks and Wildlife Department and the U.S. Fish and Wildlife Service. This notice soliciting comments is to meet the requirements of the U.S. Fish and Wildlife Service Final Procedures for Implementation of Executive Order 11988 (Flood Plain Management), Executive Order 11990 (Protection of Wetlands), and the National Environmental Policy Act.

The Environmental Assessment may be inspected at the U.S. Fish and Wildlife Service, Wildlife and Sport Fish Restoration Program Office, 500 Gold Ave. SW, Post Office Box 1306, Albuquerque, NM 87103-1306, and the Texas Parks and Wildlife Department, Jasper State Fish Hatchery, 289 Fish Hatchery Rd., Rt. 2, Box 535, Jasper, TX 75951.

Electronic copies of the Assessment may also be obtained by requesting one in an email message to: harold\_namminga@fws.gov. All comments should be sent to one of the addresses above and must be received by June 30, 2009.

TRD-200902055  
Ann Bright  
General Counsel  
Texas Parks and Wildlife Department  
Filed: May 27, 2009

◆ ◆ ◆  
**Public Utility Commission of Texas**

**Announcement of Application for Amendment to a State-Issued Certificate of Franchise Authority**

The Public Utility Commission of Texas received an application on May 26, 2009, for an amendment to a state-issued certificate of franchise authority (CFA), pursuant to §§66.001 - 66.016 of the Public Utility Regulatory Act (PURA).

Project Title and Number: Application of Southwestern Bell Telephone Company d/b/a AT&T Texas for an Amendment to its State-Issued Certificate of Franchise Authority, Project Number 37040 before the Public Utility Commission of Texas.

The requested amendment is to expand the service area footprint to include municipalities and/or unincorporated areas in and around Corpus Christi, Texas.

Information on the application may be obtained by contacting 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. Hearing and speech-impaired individuals with text telephone (TTY) may contact the commission at (512) 936-7136 or toll

free at 1-800-735-2989. All inquiries should reference Project Number 37040.

TRD-200902100  
Adriana A. Gonzales  
Rules Coordinator  
Public Utility Commission of Texas  
Filed: May 29, 2009



#### Announcement of Application for Amendment to a State-Issued Certificate of Franchise Authority

The Public Utility Commission of Texas (commission) received an application on May 27, 2009, for an amendment to a state-issued certificate of franchise authority (CFA), pursuant to §§66.001 - 66.016 of the Public Utility Regulatory Act (PURA).

Project Title and Number: Application of Rapid Communications LLC for an Amendment to its State-Issued Certificate of Franchise Authority, Project Number 37043 before the Public Utility Commission of Texas.

The requested amendment is to transfer ownership/control to HCS Cable T.V., Inc.

Information on the application may be obtained by contacting 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. Hearing and speech-impaired individuals with text telephone (TTY) may contact the commission at (512) 936-7136 or toll free at 1-800-735-2989. All inquiries should reference Project Number 37043.

TRD-200902182  
Adriana A. Gonzales  
Rules Coordinator  
Public Utility Commission of Texas  
Filed: June 1, 2009



#### Announcement of Application for Amendment to a State-Issued Certificate of Franchise Authority

The Public Utility Commission of Texas received an application on May 29, 2009, for an amendment to a state-issued certificate of franchise authority (CFA), pursuant to §§66.001 - 66.016 of the Public Utility Regulatory Act (PURA).

Project Title and Number: Application of Cebriidge Acquisition, LP d/b/a Suddenlink Communications for an Amendment to its State-Issued Certificate of Franchise Authority, Project Number 37054 before the Public Utility Commission of Texas.

The requested amendment is to expand the service area footprint to include the city limits of Farwell, Texas.

Information on the application may be obtained by contacting 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. Hearing and speech-impaired individuals with text telephone (TTY) may contact the commission at (512) 936-7136 or toll free at 1-800-735-2989. All inquiries should reference Project Number 37054.

TRD-200902198

Adriana A. Gonzales  
Rules Coordinator  
Public Utility Commission of Texas  
Filed: June 2, 2009



#### Announcement of Application for Amendment to a State-Issued Certificate of Franchise Authority

The Public Utility Commission of Texas received an application on June 1, 2009, for an amendment to a state-issued certificate of franchise authority (CFA), pursuant to §§66.001 - 66.016 of the Public Utility Regulatory Act (PURA).

Project Title and Number: Application of Friendship Cable of Texas, Inc. d/b/a Suddenlink Communications for an Amendment to its State-Issued Certificate of Franchise Authority, Project Number 37069 before the Public Utility Commission of Texas.

The requested amendment is to expand the service area footprint to include the city limits of Fairview, Texas.

Information on the application may be obtained by contacting 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. Hearing and speech-impaired individuals with text telephone (TTY) may contact the commission at (512) 936-7136 or toll free at 1-800-735-2989. All inquiries should reference Project Number 37069.

TRD-200902199  
Adriana A. Gonzales  
Rules Coordinator  
Public Utility Commission of Texas  
Filed: June 2, 2009



#### Notice of Application for Approval of Code of Conduct and Organizational Structure

Notice is given to the public of the filing on May 12, 2009, with the Public Utility Commission of Texas (commission) of an application for approval of code of conduct and organizational structure as required by PURA §39.157. The filing is required prior to securing a Certificate of Convenience and Necessity for specific facilities.

Docket Title and Number: Application of Lone Star Transmission, LLC for Approval of its Code of Conduct and Organizational Structure, Docket Number 36890 before the Public Utility Commission of Texas.

Persons who wish to comment upon 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 no later than June 22, 2009. Hearing and speech-impaired individuals with text telephone (TTY) may contact the commission at (512) 936-7136 or toll free at 1-800-735-2989. All comments should reference Docket Number 36890.

TRD-200902093  
Adriana A. Gonzales  
Rules Coordinator  
Public Utility Commission of Texas  
Filed: May 29, 2009



## Notice of Application for Designation as an Eligible Telecommunications Provider

Notice is given to the public of an application filed with the Public Utility Commission of Texas (commission) on May 22, 2009, for designation as an eligible telecommunications provider (ETP) pursuant to P.U.C. Substantive Rule §26.417.

Docket Title and Number: Application of CT Cube, L.P. d/b/a West Central Wireless and d/b/a Right Wireless for Designation as an Eligible Telecommunications Provider Pursuant to P.U.C. Substantive Rule §26.417. Docket Number 37029.

The Application: The company is requesting designation as an eligible telecommunications provider within certain non-rural telephone company wire centers of Verizon Southwest. Pursuant to 47 United States Code §214(e) and P.U.C. Substantive Rule §26.417, the commission, either upon its own motion or upon request, shall designate qualifying common carriers as eligible telecommunications carriers and ETPs for service areas set forth by the commission.

Persons who wish to comment upon the action sought should contact the Public Utility Commission of Texas by July 2, 2009. 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 Public Utility Commission's Customer Protection Division at (512) 936-7120 or (888) 782-8477. Hearing and speech-impaired individuals with text telephones (TTY) may contact the commission at (512) 936-7136 or use Relay Texas (800) 735-2989 to reach the commission's toll free number (888) 782-8477. All comments should reference Docket Number 37029.

TRD-200902097

Adriana A. Gonzales

Rules Coordinator

Public Utility Commission of Texas

Filed: May 29, 2009



## Notice of Application for Designation as an Eligible Telecommunications Provider

Notice is given to the public of an application filed with the Public Utility Commission of Texas (commission) on May 22, 2009, for designation as an eligible telecommunications provider (ETP) pursuant to P.U.C. Substantive Rule §26.417.

Docket Title and Number: Application of CGKC&H #2 Rural Limited Partnership d/b/a West Central Wireless and d/b/a Right Wireless for Designation as an Eligible Telecommunications Provider Pursuant to P.U.C. Substantive Rule §26.417. Docket Number 37030.

The Application: The company is requesting designation as an eligible telecommunications provider within certain non-rural telephone company wire centers of Verizon Southwest. Pursuant to 47 United States Code §214(e) and P.U.C. Substantive Rule §26.417, the commission, either upon its own motion or upon request, shall designate qualifying common carriers as eligible telecommunications carriers and ETPs for service areas set forth by the commission.

Persons who wish to comment upon the action sought should contact the Public Utility Commission of Texas by July 2, 2009. 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 Public Utility Commission's Customer Protection Division at (512) 936-7120 or (888) 782-8477. Hearing and speech-impaired individuals with text telephones (TTY) may contact the commission at (512) 936-7136 or use Relay Texas (800) 735-2989 to reach the commission's toll

free number (888) 782-8477. All comments should reference Docket Number 37030.

TRD-200902098

Adriana A. Gonzales

Rules Coordinator

Public Utility Commission of Texas

Filed: May 29, 2009



## Notice of Application to Amend a Certificate of Convenience and Necessity for a Proposed Transmission Line

Notice is given to the public of the filing with the Public Utility Commission of Texas (commission) an application on May 22, 2009, to amend a certificate of convenience and necessity for a proposed transmission line in Bell, Falls, Milam, and Robertson Counties, Texas.

Docket Style and Number: Application of Oncor Electric Delivery Company LLC to Amend a Certificate of Convenience and Necessity for a Proposed Transmission Line within Bell, Falls, Milam, and Robertson Counties. Docket Number 36995.

The Application: The application of Oncor Electric Delivery Company LLC (Oncor) for a proposed transmission line is designated the Bell County East - TNP One 345-kV Transmission Line Project. Oncor stated that the proposed 345-kV transmission line project will alleviate constraints that occur on the system today and will have sufficient capacity that will enable Oncor to better address present and future needs to alleviate these constraints for many years into the future. The miles of right-of-way for this project will be approximately 40 miles (preferred route). The estimated date to energize facilities is May 2011.

Persons wishing to intervene or 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. The deadline for intervention in this proceeding is July 6, 2009. Hearing and speech-impaired individuals with text telephone (TTY) may contact the commission at (512) 936-7136 or use Relay Texas (toll-free) 1-800-735-2989. All comments should reference Docket Number 36995.

TRD-200902096

Adriana A. Gonzales

Rules Coordinator

Public Utility Commission of Texas

Filed: May 29, 2009



## Notice of Application to Implement New Rough Cost Production Equalization Adjustment Rate

Notice is given to the public of an application for rate decrease filed with the Public Utility Commission of Texas (commission) on May 26, 2009, pursuant to the Public Utility Regulatory Act, Texas Utility Code Annotated §§14.001, 33.001, and 36.101 - 36.111 (Vernon 2007 and Supplement 2008) (PURA).

Docket Style and Number: Application of Entergy Texas, Inc. for Authority to Implement New Rough Production Cost Equalization Adjustment (RPCEA) Rate, Docket Number 37036.

The Application: On May 26, 2009, Entergy Texas, Inc. (ETI) filed a request that the Public Utility Commission of Texas and municipalities approve its Rough Production Cost Equalization Adjustment (RPCEA) Rider designed to credit retail customers' bills with certain payments made to ETI pursuant to the Entergy System Agreement. ETI included



a notice of rate decrease request, applicable tariff sheets, and supporting workpapers with its application.

ETI is a wholly-owned subsidiary of Entergy Corporation (Entergy). In addition to ETI, Entergy is the parent company of six other rate-regulated utilities in the United States. Entergy's domestic rate-regulated utility operating companies operate an interconnected transmission and generation system governed by the Entergy System Agreement. ETI is a higher cost operating company on the Entergy System and typically receives RPCEA payments under the terms of the Entergy System Agreement that have the effect of lowering ETI's production costs. The RPCEA Rider, which is the subject of this application, is designed to pass those payments along to ETI's retail customers in the form of a credit to customers' bills. ETI's application proposes to credit customers' bills with approximately \$67 million (including interest) of RPCEA payments received by ETI in 2008.

ETI's application affects all of ETI's retail electric customers and customer classes, except those customers receiving service under the Rate Schedules EAPS and SMS.

ETI proposed the effective date of the rate change for bills rendered with the first billing cycle of the July 2009 billing month (which begins June 30, 2009) and terminates with the last billing cycle of the September 2009 billing month. Approval of the requested RPCEA Rider will reduce 2009 revenues collected by ETI over the three-month billing period of July through September 2009 by \$67,440,892, including interest through the effective period.

The commission has exclusive original jurisdiction over this application for service provided to environs customers and to customers within the corporate limits of those cities within ETI's service territory which have ceded their regulatory jurisdiction to the commission. ETI stated that pursuant to P.U.C. Procedural Rule §22.51(b)(1), ETI is not required to publish notice to customers over whose rates the commission has exclusive original jurisdiction because the RPCEA Rider does not result in a rate increase for any customer.

The municipalities which have not ceded regulatory jurisdiction to the commission have exclusive original jurisdiction over ETI's application for service provided to customers within their respective corporate limits. Pursuant to PURA §36.103(b), ETI requested that those municipalities which have not ceded regulatory jurisdiction to the commission waive the publication of notice because the RPCEA Rider will result in a net rate reduction to affected ratepayers.

Persons who wish to intervene in the proceeding or comment upon the action sought should contact the Public Utility Commission of Texas, P.O. Box 13326, Austin, Texas 78711-3326, or call the Commission's Office of Customer Protection at (512) 936-7120 or (888) 782-8477. Hearing- and speech-impaired individuals with text telephones (TTY) may contact the commission at (512) 936-7136 or use Relay Texas (toll-free) 1-800-735-2989. All correspondence should refer to Docket Number 37036.

TRD-200902099  
Adriana A. Gonzales  
Rules Coordinator  
Public Utility Commission of Texas  
Filed: May 29, 2009



## Public Notice of Workshop on Common Terminology Per House Bill 1822

The staff of the Public Utility Commission of Texas (commission) will hold a workshop regarding the creation of common terms for electric

and telecommunications utilities, Retail Electric Providers (REPs) and Certificated Telecommunications Utilities (CTUs), per House Bill 1822 (HB 1822), on Monday, June 22, 2009, at 9:30 a.m. in Commissioners' Hearing Room, located on the 7th floor of the William B. Travis Building, 1701 North Congress Avenue, Austin, Texas 78701. Project Number 37070, *Rulemaking Proceeding to Adopt Common Terms used in Billing Telecommunications and Electric Customers* has been established for this proceeding. HB 1822 requires the commission to adopt rules to require a CTU, REP, telecommunications utility and electric utility to give clear, uniform, and understandable information to customers about rates, terms, services, customer rights and other information necessary as determined by the commission. It also requires the commission to develop a list of defined terms common to the telecommunications and electricity industries and requires that applicable terms be labeled uniformly on each retail bill sent to a customer to facilitate consumer understanding of relevant billing elements. Common terminology and the implementation of HB 1822 will be discussed at this workshop.

Questions concerning the workshop or this notice should be referred to Shawnee Claiborn-Pinto, Retail Markets Director, (512) 936-7388. Hearing and speech-impaired individuals with text telephones (TTY) may contact the commission at (512) 936-7136.

TRD-200902204  
Adriana A. Gonzales  
Rules Coordinator  
Public Utility Commission of Texas  
Filed: June 3, 2009



## The Texas A&M University System

### Award of Major Consulting Contract

In accordance with the provisions of Texas Government Code, Chapter 2254, Texas A&M University-Kingsville has entered into a contract consulting services. The selected consulting firm will conduct a compensation study and make a recommendation as per the specifications of RFP No. B900019.

Name and business address of consultant is as follows: MGT of America, Inc., 2123 Centre Point Blvd., Tallahassee, FL 32308.

Total Value of the contract is \$63,610. The contract will begin on May 27, 2009, and shall remain in effect until the completion, approval, and acceptance of all services; and the delivery of final payment.

If any, the consultant will submit documents, films, recordings, or reports compiled by the consultant under the contract to Texas A&M University-Kingsville, no later than one year after completion of services.

Any questions regarding this posting should be directed to: Ralph Stevens, Executive Director, Strategic Sourcing and General Services, Texas A&M University-Kingsville, 121 College Hall, 955 University Blvd., Kingsville, TX 78363, Voice (361) 593-3814, email [ralph.stevens@tamuk.edu](mailto:ralph.stevens@tamuk.edu).

TRD-200902057  
Don Barwick  
HUB and Procurement Manager  
The Texas A&M University System  
Filed: May 28, 2009



## How to Use the Texas Register

**Information Available:** The 14 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.

**Secretary of State** - opinions based on the election laws.

**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.

**Texas Department of Banking** - opinions and exempt rules filed by the Texas Department of Banking.

**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.

**Review of Agency Rules** - notices of state agency rules review.

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 33 (2008) is cited as follows: 33 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 "33 TexReg 2 issue date," while on the opposite page, page 3, in the lower right-hand corner, would be written "issue date 33 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, Room 245, 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 through the Internet. The address is: <http://www.sos.state.tx.us>. The *Register* is available in an .html version as well as a .pdf (portable document format) version

through the Internet. For website subscription 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 following companies also provide complete copies of the TAC: Lexis-Nexis (800-356-6548), and West Publishing Company (800-328-9352).

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 §27.15: 1 indicates the title under which the agency appears in the *Texas Administrative Code*; TAC stands for the *Texas Administrative Code*; §27.15 is the section number of the rule (27 indicates that the section is under Chapter 27 of Title 1; 15 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 *Table of TAC Titles Affected*. The table 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 one or more *Texas Register* page numbers, as shown in the following example.

TITLE 40. SOCIAL SERVICES AND ASSISTANCE  
*Part I. Texas Department of Human Services*  
40 TAC §3.704.....950, 1820

The *Table of TAC Titles Affected* is cumulative for each volume of the *Texas Register* (calendar year).