Chapter 127. Texas Essential Knowledge and Skills for Career Development and Career and Technical Education

Subchapter B. High School

Statutory Authority: The provisions of this Subchapter B issued under Texas Education Code, §7.102(c)(4) and §28.002(a) and (c), unless otherwise noted.

§127.13. Applied Mathematics for Technical Professionals (One Credit), Adopted 2015.

(a) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisites: Algebra I and Geometry. This course satisfies a high school mathematics graduation requirement. Students shall be awarded one credit for successful completion of this course.

(b) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(3) Career development is a lifelong pursuit of answers to the questions: Who am I? Why am I here? What am I meant to do with my life? It is vital that students have a clear sense of direction for their career choice. Career planning is a critical step and is essential to success.

(4) Applied Mathematics for Technical Professionals uses problem-solving situations, hands-on activities, and technology to extend mathematical thinking and engage student reasoning. Situations relating to technical applications provide students opportunities to make connections with mathematics and the workplace. In addition, students will learn the skills necessary to communicate using mathematics. Hands-on activities will allow students to model, explore, and develop abstract concepts applicable to technical careers. (Essential to this course is the partnership between mathematics and technical teachers.)

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(c) Knowledge and skills.

(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) The student uses mathematical concepts of algebra to explain linear and non-linear applications in business and industry situations. The student is expected to:

(A) calculate rise and run such as the rise and run of stair stringers or roof pitch;

(B) distinguish the purpose and difference of a linear and non-linear increase and decrease of a variable with time such as cost or profit;

(C) write systems of equations and inequalities from real-life situations that compare "best deal opportunities" with profit and expenses in businesses;

(D) use linear programing to maximize or minimize linear objective function in real-life situations and determine the reasonableness of solutions;

(E) express numbers as powers of 10 in business and industry settings;

(F) determine the powers and roots of numbers;

(G) apply compound interest formulas related to operating a business; and

(H) use exponential decay models to determine the depreciation on equipment used in business and industry and explain the meaning of models.

(3) The student applies geometric concepts to real-world problems in technical situations. The student is expected to:

(A) identify various geometric figures in order to identify what formulas are needed to solve situational problems;

(B) compute measurements such as area, surface area, volume, perimeter, and circumference in order to prepare engineering drawings for projects;

(C) use trigonometric functions such as sine, cosine, tangent, cotangent, cosecant, and secant to calculate angles and length of sides;

(D) apply Heron's formula for finding areas of triangles when the height is not known;

(E) determine how changing dimensions will affect the perimeter, area, surface area, or volume in a project;

(F) determine how angles will affect structural strength and stability;

(G) apply right triangle relationships using the Pythagorean Theorem, special right triangles, and trigonometry for roof construction, building the frame of a car, or calculating machined parts;

(H) determine the materials needed for a job or project by finding missing parts of a circle;

(I) draw orthographic and isometric views and use them to produce engineering drawings;

(J) use cross-sections, including conic sections, of three-dimensional figures to relate to plane figures in specific detail on an engineered drawing; and

(K) explain and use auxiliary views, revolutions, intersections, and engineered drawings.

(4) The student applies measurement to all aspects of business and industry occupations. The student is expected to:

(A) use dimensional analysis to select an appropriate tool to make measurements;

(B) apply accurate readings of both U.S. customary and metric measuring devices to a problem situation;

(C) square, measure, and cut materials to specified dimensions;

(D) draw segments to scale using an accurate scale and measure segments that are drawn to scales;

(E) convert temperature values between Celsius and Fahrenheit in situations involving thermodynamics; and

(F) determine length, distance, area, surface area, volume, and weight with appropriate unit labels.

(5) The student uses mathematical processes with graphical and numerical techniques to study patterns and analyze data related to finance. The student is expected to:

(A) use rates and linear functions to solve problems involving finance and budgeting, including compensations and deductions;

(B) solve problems related to local, state, and federal taxes;

(C) analyze data to make decisions about banking and finance;

(D) use mathematical processes with algebraic formulas, numerical techniques, and graphs to solve problems related to job cost analysis;

(E) identify what parameters to change such as cost of materials, cost of labor, and work time required to improve the overall cost of a project; and

(F) identify the most reasonable mathematical solution using estimation.

(6) The student applies mathematical processes to design a study and use graphical, numerical, and analytical techniques to communicate the results. The student is expected to:

(A) interpret and present situations in terms of given graphs and that fit graphics;

(B) apply Ohm's Law and Kirchhoff's laws to troubleshoot electrical circuits;

(C) collect and organize data; make and interpret scatterplots; and model, predict, and make decisions and critical judgments; and

(D) prepare technical reports and presentations with visual media or models, including tables, graphs, and verbal descriptions.

(7) The student applies mathematical principles of manufacturing processes. The student is expected to:

(A) identify the line types used on engineering drawings;

(B) identify selected symbols commonly used on engineering drawings;

(C) identify the components of engineering drawings;

(D) read, interpret, and create engineering drawings; and

(E) use proper nomenclature when identifying engineering or manufacturing processes.

Source: The provisions of this §127.13 adopted to be effective August 28, 2017, 40 TexReg 6588.

§127.15. Career and Technical Education Employability Skills.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(b) General requirements. These standards may not be offered as a standalone course. These standards shall be offered together with the essential knowledge and skills for career and technical education (CTE) courses in this chapter.

(c) Introduction.

(1) CTE instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The goal of the employability skills standards is to ensure that students develop essential skills for effective performance in the workplace, regardless of the occupation.

(3) These standards are required to be addressed in their entirety as part of each CTE course based on the level of the course in a CTE program of study.

(A) CTE courses identified as Level 1 or Level 2 courses in a CTE program of study must address the employability skills standards identified in subsection (d)(1) of this section.

(B) CTE courses identified as Level 3 or Level 4 courses in a CTE program of study must address the employability skills standards identified in subsection (d)(2) of this section.

(4) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Employability skills--Levels 1 and 2. In a CTE course identified as a Level 1 or Level 2 course in a CTE program of study, the student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) explain the importance of dressing appropriately, speaking politely, and conducting oneself in a manner appropriate for the profession and work site;

(B) describe teamwork, group dynamics, and conflict resolution and how they can impact the collective outcome;

(C) present written and oral technical communication in a clear, concise, and effective manner for a variety of purposes and audiences;

(D) identify time-management skills such as prioritizing tasks, following schedules, and tending to goal-relevant activities and how these practices optimize efficiency and results;

(E) define work ethic and discuss the characteristics of a positive work ethic, including punctuality, dependability, reliability, and responsibility for reporting for duty and performing assigned tasks;

(F) demonstrate respect for differences in the workplace;

(G) identify the importance and benefits of meritocracy, a hard work ethic, and equal opportunity in the workplace;

(H) identify consequences relating to discrimination and harassment;

(I) demonstrate knowledge of personal and occupational health and safety practices, including first aid, in the workplace;

(J) describe the roles and responsibilities of managers;

(K) identify career development and entrepreneurship opportunities in the field;

(L) identify appropriate training, education, or certification in the field; and

(M) identify legal and ethical responsibilities in relation to the field.

(2) Employability skills--Levels 3 and 4. In a CTE course identified as a Level 3 or Level 4 course in a CTE program of study, the student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) demonstrate dressing appropriately, speaking politely, and conducting oneself in a manner appropriate for the profession and work site;

(B) analyze how teams can produce better outcomes through cooperation, contribution, and collaboration from members of the team;

(C) present written and oral technical communication in a clear, concise, and effective manner for a variety of purposes and audiences, including explaining and justifying decisions;

(D) use time-management skills independently and in groups to prioritize tasks, follow schedules, and tend to goal-relevant activities in a way that optimizes efficiency and results;

(E) describe the importance of and demonstrate punctuality, dependability, reliability, and responsibility in reporting for duty and performing assigned tasks as directed;

(F) demonstrate respect for differences in the workplace;

(G) identify the importance and benefits of meritocracy, a hard work ethic, and equal opportunity in the workplace;

(H) identify consequences relating to discrimination and harassment;

(I) demonstrate knowledge of personal and occupational health and safety, applicable regulations, and first aid in the workplace and discuss why it is critical for employees and employers to maintain a safe work environment;

(J) compare skills and characteristics of managers and leaders in the workplace; and

(K) identify career development opportunities in the field:

(i) education and training;

(ii) credentialing;

(iii) internships and apprenticeships; and

(iv) entrepreneurship opportunities; and

(L) demonstrate an understanding of legal and ethical responsibilities in relation to the field.

Source: The provisions of this §127.15 adopted to be effective July 31, 2025, 50 TexReg 4419.

§127.16. Occupational Safety and Compliance Lab (One Credit), Adopted 2025.

(a) Implementation. The provisions of this section may be implemented by school districts beginning with the 2026-2027 school year.

(b) General requirements. This course is recommended for students in Grades 10-12 as a corequisite course for students participating in a coherent sequence of career and technical education (CTE) courses. This course must be taken concurrently with a corequisite Level 2 or Level 3 CTE course and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with the corequisite course to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The goal of the Occupational Safety and Compliance Lab is to provide an opportunity for students to develop safety awareness in conjunction with occupation-specific coursework. Students build a strong foundation in the occupational safety and compliance concepts that are critical to protecting individuals in the workplace, increasing safety and health, and reducing the occurrence of job-related injuries and fatalities.

(3) In Occupational Safety and Compliance Lab, students build foundational knowledge related to the fields of occupational safety, health, and compliance. Students learn about the Occupational Safety and Health Administration (OSHA), which is charged with the tasks of ensuring that employers provide a safe workplace that is free from recognized hazards, promote health and safety in the workplace, and reduce the occurrence of on-the-job injuries, illnesses, and fatalities. Students use safety resources and discover procedures for collaborating with business and industry regarding ways to increase employee safety and health.

(4) Successful completion of the standards may lead to a student earning a 10-hour or 30-hour general industry OSHA card. To earn the OSHA card, the content must be taught by an authorized OSHA outreach training program trainer.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands career options and educational requirements in occupational safety and compliance. The student is expected to:

(A) describe the impact of internships, career development, and entrepreneurship opportunities in occupational safety and compliance;

(B) identify and analyze career advancement opportunities in occupational safety and compliance at various levels in an organization such as employee, supervisor, and manager; and

(C) identify and explain requirements to obtain professional credentials such as a Certified Safety Professional (CSP), Associate Safety Professional (ASP), Construction Health and Safety Technician (CHST), Occupational Hygiene and Safety Technician (OHST), Certified Hazardous Materials Manager (CHMM), Certified Environmental Manager (CEM), and Board of Certified Safety Professionals (BCSP) in the fields of occupational safety and health compliance.

(2) The student understands the legal responsibilities of work safety in a hazardous workplace. The student is expected to:

(A) explain and discuss responsibilities of workers and employers to promote safety and health in the workplace;

(B) explain the OSHA general duty clause and the rights of workers to a safe and healthy workplace;

(C) explain and discuss the importance of OSHA standards and requirements for organizations;

(D) explain the role of industrial hygiene in occupational health and safety and describe various types of industrial hygiene hazards, including physical, chemical, airborne, excessive noise, physiological, biological, and ergonomic hazards;

(E) identify types and explain appropriate use of personal protective equipment (PPE) used in industry;

(F) explain the importance of safe walking and working surfaces in the workplace and identify best practices for preventing or reducing slips, trips, and falls in the workplace;

(G) describe types of electrical hazards in the workplace and risks associated with these hazards;

(H) describe control methods to prevent electrical hazards in the workplace;

(I) analyze hazards of handling, storing, using, and transporting hazardous materials;

(J) identify and discuss ways to reduce exposure to hazardous materials in the workplace;

(K) identify workplace health and safety resources, including emergency plans and Safety Data Sheets (SDS);

(L) discuss how emergency plans and SDS are used to make decisions in the workplace;

(M) describe elements of a safety and health program, including management leadership, worker participation, and training;

(N) explain the purpose and importance of written emergency action and fire protection plans;

(O) describe key components of written emergency action and fire protection plans such as evacuation plans and emergency exit routes, list of fire hazards, and identification of emergency personnel;

(P) explain components of a hazard communication program; and

(Q) explain and give examples of safety and health training requirements specified by standard setting organizations such as American Conference of Governmental Industrial Hygienists (ACGIH), American National Standard Institute (ANSI), National Institute for Occupational Safety and Health (NIOSH), and Board of Certified Safety Professionals (BCSP).

(3) The student analyzes the federal and state agencies that create and enforce environmental laws. The student is expected to:

(A) identify the objectives of the U.S. Environmental Protection Agency (EPA);

(B) identify the objectives of the Texas Commission on Environmental Quality (TCEQ);

(C) describe how the EPA and the TCEQ monitor compliance and enforce regulations; and

(D) identify and describe federal environmental acts, including Endangered Species Act (ESA); Safe Drinking Water Act (SDWA); Resource Conservation and Recovery Act (RCRA); Toxic Substances Control Act (TSCA); Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund); and Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

(4) The student investigates common safety measures and processes. The student is expected to:

(A) explain the significance of periodic and effective inspections for hazard control;

(B) describe the processes for reporting a hazard or accident to an immediate supervisor;

(C) explain the value of training programs that promote awareness of safety policies and procedures in the workplace;

(D) select appropriate PPE such as safety glasses, face shields, aprons, and gloves based on workplace requirements;

(E) summarize the purpose of protecting the body, including eyes, face, head, feet, arms, hands, ears, and torso, from industrial hazards;

(F) identify and describe specific causes of an incident;

(G) explain the necessity of a comprehensive safety program;

(H) outline principles of housekeeping, including order and cleanliness; and

(I) describe how a disorganized workplace, litter, and debris can create unsafe conditions that lead to accidents and illness in the workplace.

(5) The student demonstrates knowledge of workplace security and violence prevention concepts. The student is expected to:

(A) identify and describe potential types of workplace security events;

(B) identify and describe strategies to enhance workplace security; and

(C) identify and describe strategies to prevent workplace violence.

(6) The student investigates the science of ergonomics in the workplace. The student is expected to:

(A) define ergonomics;

(B) explain how the science of ergonomics is used in various industries such as manufacturing, construction, medical, and energy;

(C) evaluate workplace tasks to identify potential ergonomic problems related to body positions, including posture and awkward positions, and body movements, including repetitive movement, applying extreme force, reaching, pushing, pulling, bending, and weightlifting;

(D) describe primary body systems impacted by ergonomics; and

(E) evaluate workplace conditions that can produce physical fatigue.

(7) The student recognizes and mitigates industrial hygiene and occupational health hazards that lead to injury and illness related to exposure in the workplace. The student is expected to:

(A) explain the role of industrial hygiene in occupational safety;

(B) describe the process to identify hazards using various methods, including reviewing chemical inventories and evaluating potential hazards associated with chemicals found in the workplace;

(C) identify and describe various categories of industrial hygiene hazards;

(D) compare various types of workplace hazards, including biological, chemical, ergonomic, and physical;

(E) identify categories of hazardous substances and describe short- and long-term health effects resulting from exposure to each hazardous substance;

(F) explain industrial hygiene and occupational exposures concepts, including acute and chronic exposures; and

(G) describe essential responsibilities of supervisors, managers, and safety personnel in the prevention of occupational hazards.

(8) The student demonstrates an understanding of hazardous materials safety and handling competencies. The student is expected to:

(A) describe the Occupational Safety Health Administration (OSHA) Hazard Communication Standard, including standards for hazard classification;

(B) interpret and analyze SDS and container labeling requirements;

(C) explain the purpose and importance of proper chemical storage;

(D) describe physical properties of hazardous materials;

(E) identify and describe ways in which hazardous materials enter the body;

(F) explain various strategies to protect from inhalation of harmful airborne substances; and

(G) discuss the significance of safety precautions when handling and using compressed gas in the workplace.

(9) The student evaluates hazard control functions in various occupational settings. The student is expected to:

(A) identify and describe steps to reduce noise exposure;

(B) explain the noise reduction rating (NRR) developed by the EPA;

(C) explain the purpose and importance of eye washes and emergency showers in the workplace;

(D) identify and describe possible hazards related to heating, ventilation, and air conditioning systems;

(E) identify and describe possible hazards related to indoor air quality, including ventilation and adequate air flow;

(F) identify steps to reduce hazards related to general machine guarding, power hand tools, and tool safety;

(G) identify and describe motor vehicle safety and security management techniques such as accident prevention strategies, driver training programs, and vehicle inspection protocols;

(H) describe steps to reduce hazards related to powered industrial trucks; and

(I) identify and describe possible hazards related to ladders and scaffolds.

(10) The student investigates fire safety and emergency management in occupational safety. The student is expected to:

(A) identify and describe proper storage techniques for flammable or combustible materials;

(B) identify and describe the importance of fire systems inspections, fire confinement, emergency exits, and emergency lighting;

(C) describe the importance and maintenance of portable fire extinguishers;

(D) differentiate between fire and combustion; and

(E) describe classes of fire controlled by various extinguishing agents.

(11) The student examines special hazard fire suppression systems. The student is expected to:

(A) describe characteristics of fixed wet and dry chemical extinguishing systems;

(B) describe physical characteristics of carbon dioxide, halogenated hydrocarbons, halocarbons, and inert gases in fire suppression systems;

(C) describe design goals for smoke and fire controls and the corresponding management systems; and

(D) explain fire extinguisher operation, inspection, testing, and maintenance procedures and proper use.

(12) The student examines how accidents impact the workplace. The student is expected to:

(A) evaluate the financial impact on an organization resulting from an accident;

(B) explain workplace accident legal compliance, including OSHA accident reporting, OSHA recordkeeping regulations, and worker's compensation claims; and

(C) identify and compare accident categories, including near miss, minor injury, major injury, and catastrophic injury.

(13) The student demonstrates an understanding of accident prevention and the principles of an effective corrective action plan. The student is expected to:

(A) describe the purpose of corrective actions;

(B) develop an effective corrective action plan for an organization; and

(C) write a report documenting an accident.

(14) The student analyzes accidents and accident reports. The student is expected to:

(A) explain common unsafe actions such as working at unsafe speeds or using unsafe tools;

(B) describe human, job, and workplace factors that lead to accidents;

(C) explain the importance of timely reporting workplace accidents;

(D) complete a standard accident report form;

(E) write an effective accident report, including a summary of an incident, findings, and recommendations, using factual communication;

(F) identify and report causal factors of an accident; and

(G) analyze accident reports of small damage and near misses and describe future prevention of major accidents.

(15) The student understands the process of accident investigations. The student is expected to:

(A) identify and discuss the purpose and benefits of accident investigations in the workplace;

(B) identify and discuss the role that workers, supervisors, managers, and safety personnel have in the accident investigation process; and

(C) identify and describe the phases of an accident investigation.

Source: The provisions of this §127.16 adopted to be effective May 11, 2026, 51 TexReg 3114.

§127.17. Career and Technical Education Standards in Occupational Safety and Health, Adopted 2023.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(b) General requirements. These standards may not be offered as a standalone course. These standards shall be offered together with the essential knowledge and skills for the following career and technical education (CTE) courses:

(1) Construction Technology I;

(2) Electrical Technology I;

(3) Plumbing Technology I;

(4) HVAC Technology I;

(5) Masonry Technology I;

(6) Agriculture Mechanics and Metal Technology;

(7) Welding I;

(8) Metal Fabrication and Machining I;

(9) Oil and Gas Production II; and

(10) Introduction to Culinary Arts.

(c) Introduction.

(1) CTE instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, Occupational Safety and Health Administration (OSHA) regulations, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The goal of the occupational safety and health standards is to ensure that students develop safety consciousness in the workplace. Students build a strong foundation in the occupational safety and health concepts that are critical to protecting individuals in the workplace, increasing safety and health, and reducing the occurrence of job-related injuries and fatalities.

(3) These standards are required to be addressed in their entirety as part of each of the CTE principles courses identified in subsection (b) of this section.

(4) Successful completion of the standards may lead to a student earning a ten-hour general industry OSHA card. To earn the ten-hour OSHA card, the content must be taught by an authorized OSHA outreach training program trainer.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills. The student understands the foundations of occupational safety and health. The student is expected to:

(1) explain and discuss the responsibilities of workers and employers to promote safety and health in the workplace and the rights of workers to a secure workplace;

(2) explain and discuss the importance of OSHA standards and OSHA requirements for organizations, how OSHA inspections are conducted, and the role of national and state regulatory entities;

(3) explain the role industrial hygiene plays in occupational safety and explain various types of industrial hygiene hazards, including physical, chemical, biological, and ergonomic;

(4) identify and explain the appropriate use of types of personal protective equipment used in industry;

(5) discuss the importance of safe walking and working surfaces in the workplace and best practices for preventing or reducing slips, trips, and falls in the workplace;

(6) describe types of electrical hazards in the workplace and the risks associated with these hazards and describe control methods to prevent electrical hazards in the workplace;

(7) analyze the hazards of handling, storing, using, and transporting hazardous materials and identify and discuss ways to reduce exposure to hazardous materials in the workplace;

(8) identify workplace health and safety resources, including emergency plans and Safety Data Sheets, and discuss how these resources are used to make decisions in the workplace;

(9) describe the elements of a safety and health program, including management leadership, worker participation, and education and training;

(10) explain the purpose and importance of written emergency action plans and fire protection plans and describe key components of each such as evacuation plans and emergency exit routes, list of fire hazards, and identification of emergency personnel;

(11) explain the components of a hazard communication program; and

(12) explain and give examples of safety and health training requirements specified by standard setting organizations.

Source: The provisions of this §127.17 adopted to be effective September 10, 2023, 48 TexReg 4851.

§127.18. Scientific Research and Design (One Credit), Adopted 2024.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Biology, and one credit of the following: Physics for Engineering, Chemistry, Integrated Physics and Chemistry (IPC), or Physics. Students must meet the 40% laboratory and fieldwork requirement. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course. Students may take this course with different course content for a maximum of three credits.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) Scientific Research and Design allows districts and schools flexibility to develop local curriculum to supplement a program of study or coherent sequence. The course has the components of any rigorous scientific or career and technical education (CTE) program of study, including problem identification, investigation design, data collection, data analysis, formulation, and presentation of conclusions. These components are integrated with the CTE emphasis of helping students gain entry-level employment in high-skill, high-wage jobs and/or continue their education.

(3) Nature of science. Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not scientifically testable.

(4) Scientific hypotheses and theories. Students are expected to know that:

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

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(5) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are

manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(6) Science and social ethics. Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(7) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide tools for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(8) Students are encouraged to participate in extended learning experiences such as career and technical student organizations, other organizations that foster leadership and career development in the profession such as student chapters of related professional associations, or practical, hands-on activities or experiences through which a learner interacts with industry professionals in a workplace, which may be an in-person, virtual, or simulated setting. Learners prepare for employment or advancement along a career pathway by completing purposeful tasks that develop academic, technical, and employability skills.

(9) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as measurement and data collection tools, software, sensors, probes, microscopes, cameras, and glassware;

(E) collect quantitative data using the International System of Units (SI) and qualitative data as evidence;

(F) organize quantitative and qualitative data using notebooks, journals, graphs, charts, tables, spreadsheets, and drawings and models;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(2) Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(3) Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(4) Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors to investigate science, technology, engineering, and mathematics careers.

(5) The student develops a proposal that centers around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) establish a rationale and preliminary set of ideas for a research question or questions using organizational tools, collaboration, or research;

(B) perform a literature review and evaluate several examples related to the project;

(C) refine a research question by interacting with professionals in the field of study and document the conversations;

(D) distinguish between descriptive, comparative, or experimental research design methodologies;

(E) develop a research question or questions that are testable and measurable;

(F) justify in writing the significance and feasibility of the project;

(G) generate a materials list and propose a cost analysis; and

(H) use the citation style appropriate to the field of study throughout the documentation.

(6) The student formulates hypotheses to guide experimentation and data collection independently or in a team that centers around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) perform background research on the selected investigative problem;

(B) examine hypotheses generated to guide a research process by evaluating the merits and feasibility of the hypotheses; and

(C) identify the control, independent variable, and dependent variables within the research and justify the purpose of each.

(7) The student develops, implements, and collects data for their investigative designs that centers around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) write the procedure of the experimental design, including a schematic of the lab, materials, set up, ethical considerations, and safety protocols;

(B) conduct the experiment with the independent and dependent variables;

(C) acquire data using appropriate equipment and technology; and

(D) record observations as they occur within an investigation, including qualitative and quantitative observations such as journals, photographic evidence, logs, tables, and charts.

(8) The student organizes and evaluates qualitative and quantitative data obtained through experimentation that centers around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) manipulate data by constructing charts, data tables, or graphs using technology to organize information collected in an experiment;

(B) identify sources of random error and systematic error and differentiate between both types of error;

(C) report error of a set of measured data in various formats such as standard deviation and percent error; and

(D) analyze data using statistical methods to recognize patterns, trends, and proportional relationships.

(9) The student knows how to synthesize valid conclusions from qualitative and quantitative data that centers around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) justify conclusions that are supported by research data;

(B) consider and summarize alternative explanations for observations and results; and

(C) identify limitations within the research process and provide recommendations for additional research.

(10) The student communicates clearly and concisely to an audience of professionals conclusions that center around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) develop a plan of action on how to present to a target audience;

(B) review artifacts used in the communication of the presentation for errors, grammar, professional standards, and citations;

(C) develop a professional collection or portfolio of work that includes artifacts such as a journal, proposal, written procedures, methodology, iterations, interviews and check ins with professionals, changes within the experiment, and photographic evidence;

(D) practice a professional presentation with peers and educators using a rubric to measure content, skill, and performance;

(E) incorporate feedback provided by a review panel to document for future improvements or changes; and

(F) communicate data analysis and experimental results of original findings of a research project clearly to an audience of professionals.

Source: The provisions of this §127.18 adopted to be effective August 1, 2025, 50 TexReg 4421.

§127.19. Career and Technical Education Project-Based Capstone (One Credit), Adopted 2023.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Students shall be awarded one credit for successful completion of this course. Students may repeat this course with different course content for up to three credits.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) In Career and Technical Education Project-Based Capstone, students independently or collaboratively investigate real-world problems, issues, or interests. This course applies to a variety of career and technical education career clusters and programs of study.

(3) Career and Technical Education Project-Based Capstone is a course designed for students to develop and enhance essential skills while investigating real-world problems, issues, or interests. Students work independently or collaboratively with others within or across career clusters or programs of study. Students partner with mentor(s) or advisor(s) to develop a project. Students conduct research, compile findings, implement project activities appropriate to student contribution, and present their work to a relevant audience that may include industry experts. To attain academic success, students must have opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings to become productive and contributing members of society.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student investigates independently or collaboratively a problem, issue, or interest within a selected profession or across disciplines to develop an independent or a collaborative project. The student is expected to:

(A) research and select a problem, issue, or interest within a selected profession or across disciplines for a personal enrichment or career development project;

(B) develop a problem statement, thesis statement, research question, or value proposition statement;

(C) identify and select a design or research process such as engineering design process, design thinking model, scientific discovery, or other industry-standard methodology;

(D) identify and select an appropriate audience for a problem, issue, or interest;

(E) identify key factors such as cost, feasibility, or time constraints necessary for successful development and implementation of a solution or plan; and

(F) identify key resources such as financial, intellectual, physical, human, and digital resources needed for development and implementation of a plan.

(2) The student identifies and develops key partnerships related to a problem, issue, or interest under the supervision of one or more mentors or advisors. The student is expected to:

(A) identify key stakeholders;

(B) research and select appropriate mentor(s) or advisor(s); and

(C) recruit appropriate collaborators, partners, or contributors.

(3) The student determines timeline goals for project completion and appropriate benchmarks to measure progress and success of a project. The student is expected to:

(A) identify and use effective communication strategies to use with mentor(s) or advisor(s) to provide updates and status reports;

(B) research and identify key performance indicators (KPI) that demonstrate successful progress of a project; and

(C) select appropriate method(s) to benchmark measurement of KPI such as a Gantt chart.

(4) The student develops a project management timeline for deliverables. The student is expected to:

(A) define the key activities necessary for successful implementation of a project;

(B) identify deliverable dates for key activities to support completion of a project within an established timeline; and

(C) develop and execute a plan to monitor and complete key deliverables.

(5) The student creates a risk analysis for a project. The student is expected to:

(A) identify potential risks such as financial, economic, regulatory, ethical, environmental, or legal risks associated with the design and implementation of the project and the end product; and

(B) evaluate and select methods to mitigate potential risks associated with a project.

(6) The student identifies necessary approvals required for a project. The student is expected to:

(A) research and identify approval processes necessary to implement a project;

(B) prepare and present a proposal for project approval; and

(C) review feedback and revise an original proposal for a project as needed.

(7) The student implements a project that meets standards recognized within a selected profession or across disciplines. The student is expected to:

(A) complete a project plan that includes problem statement, thesis statement, research question, or value proposition statement; key partners; measurables; deliverables; risk analyses; and approvals;

(B) implement a plan for project completion;

(C) monitor and evaluate the progress of a project plan to determine whether modifications or changes are necessary;

(D) document all phases of a project plan; and

(E) report periodically on the progress of a project plan.

(8) The student demonstrates an understanding of a selected problem, issue, or interest by explaining or justifying findings to an appropriate audience for public comment or professional response. The student is expected to:

(A) identify an appropriate audience and coordinate the presentation of findings related to a selected problem, issue, or interest;

(B) present findings in a professional manner such as using concise language, engaging content, relevant media, and clear speech;

(C) evaluate feedback received from a presentation;

(D) evaluate the project's potential impact(s) on the identified problem, issue, or interest; and

(E) analyze and report on personal learning experiences such as essential skills gained, areas of personal growth, and challenges encountered throughout the project.

Source: The provisions of this §127.19 adopted to be effective February 13, 2024, 49 TexReg 696.

§127.20. Career Preparation General (Two Credits), Adopted 2023.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisite: at least one credit in a career and technical education course. Students shall be awarded two credits for successful completion of this course. This course may be related to or outside the student's program of study.

(1) A student may repeat this course one time for credit provided that the student is experiencing different aspects of an industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(2) A student may not earn more than six credits for any combination of career preparation courses selected from Career Preparation General, Career Preparation for Programs of Study, and Extended Career Preparation.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) Career planning is a critical step and is essential to success. Applying to multiple career and technical education clusters, the career preparation courses provide students with a framework for current employment and future career opportunities to become productive and contributing members of society.

(3) Career Preparation General provides opportunities for students to participate in a work-based learning environment that incorporates continuous collaborative feedback between the employer, teacher, and student. This course combines classroom instruction with business and industry employment experiences that may be outside the student's current program of study. The goal is for students to obtain entry-level employment developing a variety of skills for obtaining and maintaining employment. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional employability skills to gain an entry-level position. The student is expected to:

(A) identify different methods to gain employment such as employer websites, job search engines, business locations, networking, and local open forums for job opportunities;

(B) identify and demonstrate essential workplace skills such as eye contact, professional greetings, punctuality, appropriate dress, and effective communication to gain employment;

(C) develop a cover letter and create a resume, curriculum vitae (CV), or portfolio;

(D) demonstrate proper interview techniques in a variety of situations;

(E) create pre-employment documents, including thank you letters, and post-employment documents, including a resignation letter with customary notice provisions;

(F) complete appropriate employment documents, including application, offer letter, I-9 form, and W-4 form; and

(G) describe the benefits of having a job and being self-sufficient.

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

(A) identify and model appropriate hygiene, grooming, and attire for various workplaces;

(B) demonstrate professionalism by being dependable, working hard, respecting authority, solving problems, taking initiative, communicating effectively, listening actively, and resolving conflicts;

(C) model appropriate workplace etiquette in physical and digital environments;

(D) demonstrate accountability by working with other employees to support the organization, completing assigned tasks and taking responsibility for mistakes; and

(E) demonstrate time management, including prioritizing work to fulfill responsibilities and meeting deadlines.

(3) The student applies academic skills to the workplace. The student is expected to:

(A) apply appropriate industry-specific mathematical skills;

(B) develop and analyze a personal budget for a variety of economic situations such as part-time and full-time employment;

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

(D) organize, write, and curate industry-specific documents and electronic communication using appropriate language;

(E) interpret and calculate information included in an earnings statement, including wages, Federal Insurance Contributions Act (FICA) deductions, taxes, and other benefits such as tips earned; and

(F) explain how debt affects financial stability.

(4) The student exemplifies appropriate interpersonal skills in the workplace. The student is expected to:

(A) explain how interpersonal skills affect human relations on the job;

(B) differentiate between characteristics of successful and non-successful working relationships;

(C) explain the importance of respecting the rights of others;

(D) explain how different personalities, experiences, and workstyles of employees can affect the workplace; and

(E) demonstrate professional verbal and nonverbal communication, including proper phone usage, body language, and interactions with customers and coworkers in person and online.

(5) The student applies ethical codes of conduct and legal responsibilities within school and the workplace. The student is expected to:

(A) research and explain workplace policies and procedures related to absence reporting, employee theft, sexual harassment, recognized holidays, workplace safety, acceptable use policy, jury duty, attendance and punctuality, drug-free workplace, and related consequences;

(B) demonstrate responsible behavior by following applicable workplace and school codes of conduct with integrity;

(C) discuss the importance of ethical behavior in the workplace such as treating others with respect, being honest, working to full potential, and developing a quality work product;

(D) summarize the importance of the Fair Labor Standards Act;

(E) describe the potential consequences of violating privacy laws related to Family Educational Rights and Privacy Act (FERPA), Health Insurance Portability and Accountability Act (HIPAA), and Children's Online Privacy Protection Rule (COPPA);

(F) research and explain the origins and legislative intent of the Civil Rights Act of 1964, Title VII, and the Education Amendments of 1972, Title IX, and the rights and responsibilities established by these laws; and

(G) research and describe laws and regulations related to a student's employment or a chosen industry or career.

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

(A) identify and demonstrate safe working practices in the workplace;

(B) identify and illustrate solutions related to unsafe work practices;

(C) explain the importance of Occupational Safety and Health Administration regulations in the workplace; and

(D) describe physical health and mental wellness practices that influence job performance.

(7) The student evaluates personal attitudes, work habits, and skills that support job retention and advancement. The student is expected to:

(A) identify and develop effective leadership skills through participation in activities such as career and technical student organizations;

(B) identify appropriate certifications in the current employment position or desired occupational area;

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

(D) investigate and compare career options by completing interest surveys, career aptitude tests, and skill inventories;

(E) generate short- and long-term Specific, Measurable, Attainable, Realistic, Time-Bound (SMART) goals for personal and career growth;

(F) research and explain methods for developing a growth mindset;

(G) summarize how to appropriately self-advocate in the workplace; and

(H) explain the impact of an employee self-evaluations, management performance evaluations, and employee feedback responses on personal job growth.

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

(A) evaluate and compare career options, including salaries and benefits;

(B) describe how interests, abilities, personal priorities, and family responsibilities affect career choices;

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

(D) analyze the future employment outlook in an occupational area of interest;

(E) describe entrepreneurial opportunities in an occupational area of interest; and

(F) evaluate strategies for career retention and advancement in response to the changing global workforce.

Source: The provisions of this §127.20 adopted to be effective February 13, 2024, 49 TexReg 696.

§127.21. Career Preparation for Programs of Study (Two Credits), Adopted 2023.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: at least one Level 2 or higher career and technical education course. Students shall be awarded two credits for successful completion of this course.

(1) A student's employment experience connected with this course must be related to the student's program of study.

(2) A student may repeat this course one time for credit provided that the student is experiencing different aspects of an industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(3) A student may not earn more than six credits for any combination of career preparation courses selected from Career Preparation General, Career Preparation for Programs of Study, and Extended Career Preparation.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) Career planning is a critical step and is essential to success. Applying to multiple career and technical education clusters, the career preparation courses provide students with a framework for current employment and future career opportunities to become productive and contributing members of society.

(3) Career Preparation for Programs of Study provides additional opportunities for students to develop business and industry employment experiences, which must be related to the student's current program of study alongside advanced classroom instruction. The goal is to prepare students with a variety of skills to transition from job- to career-mindedness. This course provides a continuing focus on collaborative feedback between the employer, teacher, and student. Career Preparation for Programs of Study expands on Career Preparation General by increasing rigor, supporting student attainment of academic standards, and effectively preparing students for college and career success.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies and evaluates employability skills to improve the student's marketability within the workplace. The student is expected to:

(A) differentiate between a job and a career;

(B) refine an industry-specific professional portfolio or resume;

(C) identify appropriate sources for writing and obtain letters of recommendation;

(D) model proper interview skills based on a chosen career cluster;

(E) evaluate the effectiveness of various methods to gain employment;

(F) describe how having a job can lead to a career and self-sufficiency; and

(G) identify and explain work-based benefits such as health insurance, direct deposit, and retirement contributions.

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

(A) maintain appropriate hygiene, grooming, and attire for the workplace;

(B) model appropriate workplace etiquette in physical and digital environments;

(C) justify time-management decisions to fulfill responsibilities and meet deadlines;

(D) analyze employer expectations by reflecting on evaluations;

(E) demonstrate effective listening skills used in the workplace through appropriate interactions with customers and coworkers; and

(F) cultivate and improve professionalism by continuously being dependable, working hard, respecting authority, solving problems, taking initiative, communicating effectively, and listening actively.

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

(A) integrate mathematical concepts into business transactions such as counting inventory, calculating discounts, and conducting cash transactions;

(B) compare earning potential for careers within a selected program of study with personal financial goals;

(C) analyze and apply data from industry-specific tables, charts, or graphs to generate solutions to problems; and

(D) analyze and synthesize information from electronic communications, including forms, reports, or summaries.

(4) The student demonstrates leadership qualities by applying work ethic, job expectations, multicultural considerations, and communication skills in the workplace. The student is expected to:

(A) identify positive interpersonal skills, including conflict resolution, effective communication, and respect for all people, and model these skills as a mentor with peers;

(B) apply effective verbal, nonverbal, written, or electronic communication skills to a variety of audiences;

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

(D) classify a variety of working relationships into functional and dysfunctional characteristics; and

(E) participate in leadership and career-development activities related to a selected program of study.

(5) The student models ethical codes of conduct and legal responsibilities within school and the workplace. The student is expected to:

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

(B) analyze the legal consequences of violating privacy laws related to Family Educational Rights and Privacy Act (FERPA), Health Insurance Portability and Accountability Act (HIPAA), and Children's Online Privacy Protection Act (COPPA);

(C) research and describe laws governing different professions within a selected program of study;

(D) analyze organizational policies and procedures and ethical standards from the student's current place of employment; and

(E) interpret and evaluate the rights and responsibilities of employers and employees.

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

(A) research and describe different types of identity theft to identify associated risks and prevention strategies;

(B) identify and evaluate consequences of breach of personal and occupational safety practices in the workplace;

(C) model safe working practices at a training station;

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

(E) analyze how physical health and mental wellness practices influence career longevity and satisfaction in a career within a selected program of study.

(7) The student models the skills that support employment retention and advancement. The student is expected to:

(A) create a personal growth plan that identifies relevant certifications, postsecondary opportunities, and technical skills required for various levels of employment based on a chosen career within a selected program of study and describe how to obtain them;

(B) develop short- and long-term Specific, Measurable, Attainable, Realistic, Time-Bound (SMART) goals based on personal and professional growth plans;

(C) analyze the rewards and demands of career advancement;

(D) model appropriate self-advocacy in various workplace scenarios;

(E) compare current employee performance evaluations to previous evaluations to identify areas of growth and opportunities for continued development; and

(F) evaluate and compare employment advancement considerations such as salaries, benefits, and qualifications.

(8) The student analyzes postsecondary career opportunities within a selected program of study. The student is expected to:

(A) research and compare declining and growth industries across career clusters;

(B) identify and analyze future job growth within a selected program of study based on societal needs;

(C) analyze the skills required to be successful in emerging industries;

(D) identify continuing education opportunities to determine education and training requirements for future careers within a selected program of study;

(E) research and evaluate entrepreneurial opportunities related to a selected program of study; and

(F) evaluate how personal priorities such as interests, abilities, and family responsibilities may influence career choice.

Source: The provisions of this §127.21 adopted to be effective February 13, 2024, 49 TexReg 696.

§127.22. Extended Career Preparation (One Credit), Adopted 2023.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Corequisite: Career Preparation General or Career Preparation for Programs of Study. This course must be taken concurrently with Career Preparation General or Career Preparation for Programs of Study and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course.

(1) A student may repeat this course one time for credit provided that the student is experiencing different aspects of an industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(2) A student may not earn more than six credits for any combination of career preparation courses selected from Career Preparation General, Career Preparation for Programs of Study, and Extended Career Preparation.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) Career planning is a critical step and is essential to success. Applying to multiple career and technical education clusters, the career preparation courses provide students with a framework for current employment and future career opportunities to become productive and contributing members of society.

(3) Extended Career Preparation is an enhancement and extension to Career Preparation General or Career Preparation for Programs of Study to provide additional opportunities for students to participate in a work-based learning experience that combines classroom instruction with business and industry employment experiences that may be outside the student's current program of study. The goal is to provide students additional time for deeper exploration of skills in the workplace. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates employability skills as required by business and industry. The student is expected to:

(A) identify and participate in training, education, or preparation for licensure, certification, or other relevant credentials to prepare for employment;

(B) complete work tasks with high standards to ensure delivery of quality products and services; and

(C) demonstrate and apply planning and time-management skills to work tasks.

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

(A) demonstrate and apply professional standards and personal qualities needed to be employable such as punctuality, initiative, patience, kindness, respect for authority, and cooperation;

(B) apply appropriate content knowledge, technical concepts, and vocabulary in the workplace;

(C) apply effective listening skills to obtain and clarify information in the workplace; and

(D) maintain appropriate hygiene, grooming, and attire in the workplace.

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

(A) employ critical-thinking skills to solve problems and make decisions; and

(B) analyze elements of a problem to develop creative and innovative solutions.

(4) The student exemplifies appropriate interpersonal and communication skills in the workplace. The student is expected to:

(A) demonstrate teamwork using conflict-management skills to achieve collective goals;

(B) apply verbal and non-verbal communication skills consistently in a manner that is clear, concise, and effective; and

(C) model effective internal and external communications to support work activities.

(5) The student models ethical codes of conduct and legal responsibilities within the workplace. The student is expected to:

(A) demonstrate a positive work ethic by performing assigned tasks as directed;

(B) model ethical reasoning in workplace situations;

(C) comply with all applicable rules, laws, and regulations in the workplace; and

(D) research and explain the roles of the Equal Employment Opportunity Commission (EEOC) and the Texas Workforce Commission (TWC) in the workplace.

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

(A) follow workplace safety rules and regulations consistently;

(B) operate tools and equipment used in the workplace safely;

(C) report and handle accidents and safety incidents according to workplace procedures as necessary; and

(D) describe and perform a hazard analysis of the workplace.

(7) The student participates in a paid or an unpaid career preparation experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised employment experience;

(B) assess and report on advanced technical knowledge and skills related to the student's occupational objective and growth;

(C) evaluate strengths and weaknesses in technical skill proficiency; and

(D) document experiences related to the workplace and curate work samples.

Source: The provisions of this §127.22 adopted to be effective February 13, 2024, 49 TexReg 696.