

**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 the Texas Education Code, §§7.102(c)(4), 28.002, 28.00222, and 28.025, 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 1.2a0.5 (s)-2.2 (a)-1.1 (t)0.5 (i)1 (d)59562 (f)-4a)9.9 ( (a)9.9 (de)9.9 containing the phrase "such as" are intended as possible illustrative examples.
- (c) Knowledge and skills.



- (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)

- (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.

**§127.17. 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) 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

- (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 independent variables and dependent variables in a function. (CC.12-13.M.1-2.A.1) (CC.12-13.M.1-2.A.2) (CC.12-13.M.1-2.A.3) (CC.12-13.M.1-2.A.4) (CC.12-13.M.1-2.A.5) (CC.12-13.M.1-2.A.6) (CC.12-13.M.1-2.A.7) (CC.12-13.M.1-2.A.8) (CC.12-13.M.1-2.A.9) (CC.12-13.M.1-2.A.10) (CC.12-13.M.1-2.A.11) (CC.12-13.M.1-2.A.12) (CC.12-13.M.1-2.A.13) (CC.12-13.M.1-2.A.14) (CC.12-13.M.1-2.A.15) (CC.12-13.M.1-2.A.16) (CC.12-13.M.1-2.A.17) (CC.12-13.M.1-2.A.18) (CC.12-13.M.1-2.A.19) (CC.12-13.M.1-2.A.20)



- (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)





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

(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 provideurd.5 (c6(at)1.52 ( )0.5 (o)180 Tw 1.162 )4.7 (o)2 (c9.9 (t)f)6 i7 (t

- (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

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;
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