Career and Technical Education TEKS Review Draft Recommendations

Texas Essential Knowledge and Skills (TEKS) for Career and Technical Education Draft Recommendations

Transportation, Distribution, and Logistics Career Cluster

Programs of Study: Aviation Maintenance; Aviation (Pilots); Diesel and Heavy Equipment Maintenance and Commercial Drivers; and Distribution, Logistics, and Warehousing

Texas State Technical College

The document reflects the draft recommendations to the career and technical education (CTE) Texas Essential Knowledge and Skills (TEKS) that have been recommended by content experts facilitated by Texas State Technical College for: **Aviation Maintenance; Aviation (Pilots); Diesel and Heavy Equipment Maintenance and Commercial Drivers; and Distribution, Logistics, and Warehousing programs of study.**

Proposed additions and new courses are shown in green font with underline (additions). Proposed deletions are shown in red font with strikethroughs (~~deletions~~). Text proposed to be moved from its current student expectation is shown in purple italicized font with strikethrough (~~*moved text*~~) and is shown in the proposed new location in purple italicized font with underlines (*new text location*). Numbering for the knowledge and skills statements in the document will be finalized when the proposal is prepared to file with the *Texas Register*.

Comments in the right-hand column provide explanations for the proposed changes. The following notations may be used as part of the explanations.

Abbreviation	Description
KS	refers to knowledge and skills statement
SE	refers to student expectation

Table of Contents

§127.XX. Introduction to Aviation Electronic Systems (One Credit), Adopted 202X.		
	TEKS with edits	Work Group Comments/Rationale
(a)	Implementation. The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.	
(1)	No later than August 31, 2025, the commissioner of education shall determine whether instructional materials funding has been made available to Texas public schools for materials that cover the essential knowledge and skills identified in this section.	
(2)	If the commissioner makes the determination that instructional materials funding has been made available this section shall be implemented beginning with the 2025-2026 school year and apply to the 2025-2026 and subsequent school years.	
(3)	If the commissioner does not make the determination that instructional materials funding has been made available under this subsection, the commissioner shall determine no later than August 31 of each subsequent school year whether instructional materials funding has been made available. If the commissioner determines that instructional materials funding has been made available, the commissioner shall notify the State Board of Education and school districts that this section shall be implemented for the following school year.	
(b)	General requirements. This course is recommended for students in Grades 9-11. Students shall be awarded one credit for successful completion of this course.	
(c)	Introduction.	
(1)	Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.	

(3)	In the field of aviation, the role of an avionics technician is critical, as these systems allow pilots to navigate, communicate, and manage the aircraft with precision. With the rise of advanced air mobility (AAM) initiatives, avionics technicians are in high demand to support emerging technologies such as electric aircraft, spacecraft and drones, which require cutting-edge avionics skills. These systems include communications, navigation, flight control, and monitoring instruments essential to safe and efficient flight operations. As an avionics technician, you'll be trained to install, troubleshoot, and repair complex electronic equipment, ensuring all avionics are functioning to regulatory and safety standards. Diagnosing system issues, updating software, or calibrating sensitive instruments like radar, autopilot, and GPS systems.	
(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 standards/employability skills as required by business and industry. The student is expected to:	
(A)	identify and compare employment opportunities, including entrepreneurship opportunities, and certification requirements for the field of aircraft avionics;	
(B)	exhibit the ability to cooperate, contribute, and collaborate as a member of a team;	
(C)	identify individual ethical and legal behavior standards according to professional and regulatory agencies;	
(D)	research Federal Aviation Regulations and discuss the impact of the English language proficiency requirements as prescribed by the Federal Aviation Regulations;	
(E)	identify and explain human factors that may impact health and safety in a worksite and how they are addressed by industry standards;	
(F)	explain the role of human factors in maintaining health and safety in the workplace and demonstrate personal responsibility to maintain health and safety in the workplace;	
(G)	identify and explain how employees' personal responsibility and other human factors, including personal attitudes, can affect the success and profitability of a workplace;	
(H)	apply reasoning skills to a variety of simulated workplace situations to make ethical decisions;	

(I)	identify industry standards for employee appearance and health habits;	
(J)	demonstrate appropriate etiquette and behavior;	
(K)	identify and demonstrate effective written and oral communication skills; and	
(L)	identify and demonstrate effective listening skills.	
(2)	The student relates academic skills to the requirements of aircraft avionic maintenance, repair, calibrate, and installation. The student is expected to:	
(A)	demonstrate effective oral and written communication skills with individuals from various cultures such as fellow workers, management, and customers;	
(B)	identify requirements of work orders and technical documents for repairs;	
(C)	locate and interpret documents, including schematics, drawings, blueprints, wiring diagrams, service-repair manuals, service bulletins, supplemental type certificates, airworthiness directives, federal aviation regulations, and advisory information;	
(D)	demonstrate proficiency in metric and U.S. customary standard measurement systems;	
(E)	perform precision measurements using electronic test equipment, multimeters, oscilloscopes, power meters, and specific test equipment to determine if a component is within tolerance of specifications;	
(F)	use critical-thinking and problem-solving skills to identify aircraft maintenance problems and recommend solutions; and	
(G)	documents repair actions in accordance with regulations, in logbooks, aircraft forms, or specialized agencies procedure.	
(3)	The student understands the academic knowledge and skills for aircraft communication systems, Very High Frequency (VHF), Ultra High Frequency (UHF), High Frequency (HF), and Emergency Locator Transmitter (ELT). The student is expected to:	
(A)	describe the capabilities and limitations of aviation communication systems;	
(B)	describe the theory of operation for aviation communication systems and how they have evolved over time;	

(C)	explain use of aircraft communication systems and what role they play in overall flight safety: and	
(D)	describe the frequencies use by pilots to communicate both long range, short range, and special use frequencies.	
(4)	The student understands the academic knowledge and skills for aircraft navigation systems, VHF Omni Range (VOR), Automatic Direction Finding (ADF), Localizers (LOC), Glide Slope (GS), Marker Beacon (MKR), Distance Measuring Equipment (DME), Area Navigation (RNAV), Global Positioning System (GPS) and associated instruments. The student is expected to:	
(A)	explain the different capabilities and accuracies of each of the navigational system;	
(B)	describe the purpose and use of aviation navigation systems and landing systems how they have evolved over time;	
(C)	describe the theory of operation of aviation navigation systems and how the pilot uses these systems to operate and land the aircraft safely;	
(D)	explain use of aircraft navigation and landing systems and what role they play in overall flight safety; and	
(E)	describe the frequencies used by pilots to navigate, including special use frequencies.	
(5)	The student understands the academic knowledge and skills for aircraft monitoring systems, Transponder, Automatic Dependent Surveillance-Broadcast (ADS-B), Flight Information System Broadcast (FIS-B), Traffic information service – broadcast (TIS-B), Enhanced Ground Proximity Warning System (EGPWS), Traffic alert and Collision Avoidance System (TCAS). The student is expected to:	
(A)	explain the different capabilities of each of the monitoring system;	
(B)	describe the purpose and use of aviation monitoring systems and how they have evolved over time;	
(C)	describe the theory of operation of aircraft monitoring and how the pilot and other aircraft use these systems to operate aircraft safely; and	
(D)	describe the frequencies and pulse trains associated with monitor systems, including special use frequencies and coding.	

(6)	The student understands the academic knowledge and skills for instrument and autopilot systems, magnetic compasses, gyroscopic instruments, slave compass, pitot-static systems, and flight director systems. The student is expected to:	
(A)	explain the different capabilities and limitations of each of the instrument and autopilot system;	
(B)	describe the purpose and use of aviation instrument and autopilot systems and how they have evolved over time;	
(C)	describe the theory of operation of aircraft instrument and autopilot and how the pilot and other aircraft use these systems to operate aircraft safely; and	
(D)	explain the flight director and the integration between instruments, autopilot, and other navigational systems.	
(7)	The student uses regulatory and industry standards and demonstrates technical knowledge and skills for new installations, including system calibration. The student is expected to:	
(A)	perform and document new system installations and calibrations on aircraft;	
(B)	install wiring harnesses, instrument's, equipment, and complete systems; and	
(C)	understand avionics systems to integrate new system with existing systems.	

§127.XX. Private Pilot Ground School (Two Credits), Adopted 202X.		
	TEKS with edits	Work Group Comments/Rationale
(a)	Implementation. The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.	
(1)	No later than August 31, 2025, the commissioner of education shall determine whether instructional materials funding has been made available to Texas public schools for materials that cover the essential knowledge and skills identified in this section.	
(2)	If the commissioner makes the determination that instructional materials funding has been made available this section shall be implemented beginning with the 2025-2026 school year and apply to the 2025-2026 and subsequent school years.	
(3)	If the commissioner does not make the determination that instructional materials funding has been made available under this subsection, the commissioner shall determine no later than August 31 of each subsequent school year whether instructional materials funding has been made available. If the commissioner determines that instructional materials funding has been made available, the commissioner shall notify the State Board of Education and school districts that this section shall be implemented for the following school year.	
(b)	General requirements. This course is recommended for students in Grades 11-12. Students shall be awarded two credits for successful completion of this course.	
(c)	Introduction.	
(1)	Career and technical education instruction provide content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.	
(3)	Private Pilot Ground School course, students gain foundational knowledge and skills essential for becoming a pilot. Students explore key topics such as the principles of flight, navigation, meteorology, aviation regulations, and aircraft systems. Students develop critical thinking, decision-making, and problem-solving skills specific to aviation. Additionally, students explore the importance of professionalism, communication, and teamwork in the aviation industry.	

(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 standards/employability skills as required by business and industry. The student is expected to:	
(A)	identify and compare certification requirements for the field of aircraft pilot training;	
(B)	exhibit the ability to cooperate, contribute, and collaborate as a member of a team;	
(C)	identify individual ethical and legal behavior standards according to professional and regulatory agencies; and	
(D)	identify industry standards for employee appearance and health habits.	
(2)	The student demonstrates knowledge of Federal Aviation Administration (FAA) Medical Certificates, pilot classifications, and regulations regarding privileges, limitations, and flight operations. The student is expected to:	
(A)	compare the durations of FAA Medical Certificates;	
(B)	describe the various pilot classifications and requirements;	
(C)	explain the requirements for pilot certification, including training and medical certifications; and	
(D)	explain the importance of compliance with FAA regulations in ensuring safe and legal flight operations.	
(3)	The student examines the components and systems of the airplane. The student is expected to:	
(A)	describe various engine types;	
(B)	describe the functional use of cockpit engine controls;	
(C)	identify and describe the components of the exterior or the airplane;	
(D)	identify and describe the flight controls of an airplane;	
(E)	explain the four-stroke, five-event sequence for piston engine operation;	

(F)	describe the function of the magnetos;	
(G)	describe the parts of the ignition and fuel systems found in both the carbureted and fuel-injected engines;	
(H)	describe the prop, hydraulic, environmental, oil, and electrical systems found on aircraft;	
(I)	identify and list the various velocity speeds (V- speeds) and their relevance to the flight pilot operating handbook (POH);	
(J)	list the different aircraft categories, classes, and types;	
(K)	describe the functional use of the airspeed indicator, pitot-static systems, altimeter, vertical speed indicator, attitude indicator, and heading indicator; and	
(L)	describe and demonstrate the preflight process.	
(3)	The student demonstrates knowledge of aerodynamics and the principles of flight. The student is expected to:	
(A)	name the four forces of flight and describe the effects of those forces on the aircraft;	
(B)	describe the three laws of motion;	
(C)	explain Bernoulli's principle and describe the application to the wind flow over the wing of the aircraft;	
(D)	label and describe an airfoil stall;	
(E)	describe spins;	
(F)	list the steps to proper spin recovery of an airfoil;	
(G)	list different types of flaps and describe the aerodynamic effects of flaps on the production of lift;	
(H)	explain parasitic drag and induced drag and the effect of drag on an aircraft;	
(I)	describe aircraft stability by explaining longitudinal, lateral, and vertical stability; and	
(J)	perform weight and balance of the aircraft.	
(4)	The student demonstrates knowledge of aviation weather and its effects on flight operations. The student is expected to:	
(A)	describe basic meteorological principles and the pertinence to flight, including the Earth's atmosphere, heat, temperature, humidity, wind patterns, jet stream, and Coriolis force;	

(B)	interpret aviation weather reports, including meteorological aerodrome reports (METAR) terminal area forecasts (TAF), and pilot reports (PIREP);	
(C)	describe the use of aviation weather charts such as surface analysis charts, radar summaries, and winds aloft forecasts;	
(D)	explain the development of hazardous weather phenomena, including turbulence, wind shear, thunderstorms, and icing as it pertains to flight;	
(E)	identify weather minimums for various types of airspace and pilot certifications; and	
(F)	describe the effects of density altitude on aircraft performance.	
(5)	The student demonstrates the ability to apply navigation principles and flight planning techniques. The student is expected to:	
(A)	describe the principles of risk management and aeronautical decision-making (ADM) in flight operations;	
(B)	identify common causes of and prevention strategies;	
(C)	explain emergency procedures for system failures, including engine, electrical, and flight control malfunctions;	
(D)	describe procedures for lost communications, forced landings, and inadvertent entry into instrument meteorological conditions (IMC); and	
(E)	explain the purpose of emergency equipment such as fire extinguishers, emergency locator transmitters (ELT), and survival kits.	
(6)	The student analyzes and explains different visual flight rules (VFR) navigation forms, including aeronautical charts, pilotage, dead reckoning, and navigation systems. The student is expected to:	
(A)	explain 14 CFR Appendix B to Part 141 3(b)(4);	
(B)	describe the purpose of the FAA Flight Planning System;	
(C)	list the ways to file a flight plan;	
(D)	explain the purpose of a very high-frequency omnidirectional receiver (VOR) in navigation;	
(E)	describe the volumes of VORs and VOR usage in lost procedures;	

(F)	explain how aircraft can track a signal;	
(G)	define and explain how to prevent homing;	
(H)	describe radials and bearings related to the VOR signal;	
(I)	define and describe the purpose of dead reckoning;	
(J)	describe how the omni-bearing selector (OBS) receivers work;	
(K)	describe the function of horizontal situation indicator (HIS) and radio magnetic indicator (RMI); and	
(L)	describe the purpose and use of common navigation systems and communications systems found in general aviation aircraft.	
(7)	The student explains the operational systems of an aircraft. The student is expected to:	
(A)	describe the functions of the electrical, fuel, hydraulic, and environmental systems;	
(B)	explain the components and operations of fixed-pitch and constant-speed propellers; and	
(C)	explain the function and operation of landing gear systems, including retractable and fixed gear configurations.	
(8)	The student explains human factors and physiological considerations in aviation. The student is expected to:	
(A)	explain the effects of hypoxia, hyperventilation, and spatial disorientation on pilots;	
(B)	describe visual illusions and the impact on flight safety during night and instrument meteorological conditions operations;	
(C)	summarize the significance of crew resource management (CRM) and effective communication in cockpit operations; and	
(D)	identify and explain the effects of fatigue, stress, and alcohol on pilot performance.	
(9)	The student explains the function of the National Air Space System (NAS). The student is expected to:	
(A)	define and describe the purpose of controlled airspace;	
(B)	define and describe the purpose of uncontrolled airspace;	
(C)	define and describe the purpose of special-use airspace;	

(D)	define and describe the purpose of Temporary Flight Restrictions (TFR's);	
(E)	describe transponder usage and codes; and	
(F)	describe all cloud clearance and visibility requirements for all classes of airspace.	
(10)	The student explains collision avoidance techniques and recognition and avoidance of wake turbulence. The student is expected to:	
(A)	describe and prioritize aircraft right-of-way rules;	
(B)	explain and demonstrate proper scanning techniques;	
(C)	describe proper high-wind taxi procedures; and	
(D)	describe recognition and avoidance of wake turbulence.	
(11)	The student analyzes airport operations. The student is expected to:	
(A)	identify and explain the purpose of airport signage;	
(B)	describe towered and non-towered airport operations communications;	
(C)	describe the various kinds of wind indicators on an airport;	
(D)	describe the land and hold short operations (LAHSO) operations and the purpose;	
(E)	identify and describe the various types of glide-path lighting; and	
(F)	identify and demonstrate common hand signals that are used to direct aircraft at an airport.	
(12)	The student explains air traffic control (ATC) resources and services. The student is expected to:	
(A)	describe common procedures used for radio communication with ATC in various flight and ground environments;	
(B)	explain 14 CFR Appendix B to Part 141 3(b)(5-6);	
(C)	explain airport surveillance radar (ASR), air route surveillance radar (ARSR), terminal radar approach control facilities (TRACON), and air route traffic control center (ARTCC) and the services available to pilots;	
(D)	describe automatic terminal information service (ATIS);	

(E)	describe the common transponder codes to squawk in flight;	
(F)	describe the services offered by flight service stations (FSS) to a pilot;	
(G)	list the various ways a pilot may open and close a flight plan;	
(H)	describe various transponder types and requirements for controlled airspace;	
(I)	list and demonstrate usage of the International Civil Aviation Organization (ICAO) phonetic alphabet;	
(J)	list the limitations in VHF radio transmissions;	
(K)	describe the role of a frequency allocation used as a common traffic advisory frequency by aircraft near airports where no air traffic control is available (MULTICOM), common traffic advisory frequency (CTAF), and FSS radio frequencies and services;	
(L)	describe how to obtain an ATC clearance in various flight operations;	
(M)	explain the tower light gun signals and the purpose to the aircraft;	
(N)	describe emergency locator transmitter (ELT) operations and search and rescue (SAR) procedures; and	
(O)	describe and demonstrate the use of the chart supplement to ascertain specific airport information, preferred routes, and common frequencies needed in preflight planning and inflight operations.	
(13)	The student analyzes pertinent chapters of Title 14 Code of Federal Regulations and chapters from the Aeronautical Information Manual, Advisory Circulars, and accident reporting to the National Transportation Safety Board (NTSB). The student is expected to:	
(A)	describe the actions necessary after an accident or incident and how they are reported to the NTSB;	
(B)	explain 14 CFR Appendix B to Part 141 3(b)(1-3);	
(C)	describe flight-specific and airport-specific data obtained from the Chart Supplement as it pertains to emergency operations;	
(D)	explain the purpose of the federal aviation regulations associated to emergency procedures;	
(E)	describe the use, available information, and purpose of the AIM (Airmen's Information Manual);	
(F)	explain the purpose and types of the notice to airman (NOTAM) publications and where to locate and submit; and	
(G)	describe the purpose and function of the advisory circulars (AC).	

(14)	The student explains aviation physiology and its application to preflight and inflight operations. The student is expected to:	
(A)	describe the visual and inner-ear illusions that a pilot can experience in flight;	
(B)	describe the nighttime visual illusions and how to avoid them;	
(C)	explain the physiological factors that affect pilot performance; and	
(D)	describe the spatial disorientation that a pilot can feel in a spin.	
(15)	The student analyzes human factors in aviation, including aeronautical decision making and judgment. The student is expected to:	
(A)	explain 14 CFR Appendix B to Part 141 3(b) (12);	
(B)	describe the decision-making process as it applies to the pilot being fit to fly;	
(C)	describe the decision-making process as it applies to the environmental factors allowing flight;	
(D)	describe the decision-making process as it applies to the aircraft being ready to fly;	
(E)	explain the pre-flight IMSAFE checklist;	
(F)	describe the components of the decision-making model (DECIDE);	
(G)	identify and describe the four types of hypoxia and signs of hypoxia and how it affects a pilot;	
(H)	define aviation physiology and spatial disorientation and vestibular illusions; and	
(I)	define carbon monoxide and identify signs of carbon monoxide poisoning.	

§127.XX Advanced Transportation Systems (One Credit), Adopted 202X.		
	TEKS with edits	Work Group Comments/Rationale
(a)	Implementation. The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.	
(1)	No later than August 31, 2025, the commissioner of education shall determine whether instructional materials funding has been made available to Texas public schools for materials that cover the essential knowledge and skills identified in this section.	
(2)	If the commissioner makes the determination that instructional materials funding has been made available this section shall be implemented beginning with the 2025-2026 school year and apply to the 2025-2026 and subsequent school years.	
(3)	If the commissioner does not make the determination that instructional materials funding has been made available under this subsection, the commissioner shall determine no later than August 31 of each subsequent school year whether instructional materials funding has been made available. If the commissioner determines that instructional materials funding has been made available, the commissioner shall notify the State Board of Education and school districts that this section shall be implemented for the following school year.	
(b)	General requirements. This course is recommended for students in Grade 12 or over the age of 18. Students shall be awarded one credit for successful completion of this course.	
(c)	Introduction.	
(1)	Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.	
(2)	The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.	
(3)	Commercial Learner's Permit Theory Instruction is designed to provide you with the foundational knowledge you need to safely and effectively operate commercial vehicles. The training curriculum is divided into two main components: theory instruction and behind-the-wheel (BTW) training. Each component addresses specific skills and knowledge essential for safe and effective commercial vehicle operation. The U.S. Department of Transportation (DOT), through the Federal Motor Carrier Safety Administration (FMCSA), established the Entry-Level Driver Training (ELDT) regulations to ensure consistent, high-quality training for individuals seeking a Class A Commercial Driver's License (CDL). These regulations mandate a standardized training curriculum for aspiring commercial drivers to enhance road safety and improve the proficiency of new	

	entrants into the trucking industry. The ELDT requirements apply to anyone obtaining a Class A CDL for the first time, upgrading an existing CDL, or pursuing specific endorsements such as hazardous materials (H), passenger (P), or school bus (S) endorsements.	
(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 standards/employability skills as required by business and industry. The student is expected to:	
(A)	demonstrate knowledge of the technical knowledge and skills related to health and safety in the workplace such as safety glasses and other personal protective equipment (PPE) and safety data sheets (SDS);	
(B)	identify employment opportunities, including entrepreneurship opportunities and internships, and industry-recognized certification requirements in the transportation field of study;	
(C)	demonstrate the principles of group participation, team concept, and leadership related to citizenship and career preparation;	
(D)	apply competencies related to resources, information, interpersonal skills, problem solving, critical thinking, and systems of operation in the transportation industry;	
(E)	discuss certification opportunities;	
(F)	discuss response plans to emergency situations;	
(G)	identify employers' expectations and appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and	
(H)	develop personal goals, objectives, and strategies as part of a plan for future career and educational opportunities.	

(2)	The student demonstrates knowledge of Federal Motor Carrier Safety Regulations (FMCSRs), proper inspection of safety-critical components on a commercial motor vehicle (CMV), and safe operation and operating characteristics of a CMV in various road and traffic conditions. The student is expected to:	
(A)	explain the essential duties and responsibilities of commercial drivers and the unique challenges they face on the job;	
(B)	discuss state and local laws regarding safe operation of the CMV, vehicle size and weight limitations, FMCSRs and Hazardous Materials Regulations (HMR);	
(C)	discuss the control systems of a dashboard;	
(D)	describe relative vehicle controls and dashboard symbols, including proper use of instruments and warnings;	
(E)	discuss thorough inspections to ensure vehicle readiness and compliance with safety standards;	
(F)	explain basic vehicular control and handling of combination vehicles, including turning, centering the vehicle, maneuvering in restricted areas, and entering and exiting highways;	
(G)	describe shifting patterns, up and down shifting techniques, and the importance of increased vehicle control utilizing proper shifting techniques;	
(H)	explain how to back up safely in various environments, using proper techniques and precautions; and	
(I)	describe the requirements of the safe process for connecting and disconnecting trailers to the vehicle.	
(3)	The student understands the safe operations and regulations associated. The student is expected to:	
(A)	explain the use of mirrors and describe how to visually search the road for hazards and critical objects;	
(B)	explain how to recognize distracted road users and pedestrians;	
(C)	describe the proper use of headlights, turn signals, four-way flashers, and horns to communicate intentions to other road users;	
(D)	explain the effectiveness of proper signaling and utilization of eye contact with other road users and pedestrians for safe driving;	
(E)	explain how to recognize types of driver distractions, including visual attention (keeping eyes on the road), manual control (keeping hand on the wheel), and cognitive awareness (keeping mind on the task and safe operation of the CMV);	

(F)	explain the proper use of cell phones, texting, and use of in-cab technology with regard to federal regulations 49 CFR Part 392 §§ 392.80 and 392.82;	
(G)	explain the importance of speed control and cargo weight awareness;	
(H)	describe the requirements of the safe following distances between vehicles, particularly in high-risk or congested areas;	
(I)	explain how to adapt safe driving techniques for night driving; and	
(J)	explain how to adapt safe driving practices for extreme weather conditions such as heavy rain, fog, ice, or high winds.	
(4)	The student will understand the hazards and procedures of vehicles in advanced situations. The student is expected to:	
(A)	describe the process to recognize and respond to potential hazards on the road;	
(B)	explain how to execute emergency procedures and techniques to regain control of the vehicle in case of skids or unexpected road situations; and	
(C)	explain how to execute railroad-highway grade crossings.	
(5)	The student understands the basic mechanical issue to include the inspection and roadside inspections required to safely operate the vehicle. The student is expected to:	
(A)	explain how to identify common mechanical issues and know when to report malfunctions;	
(B)	explain the purpose and process of roadside inspections to include common checks and driver responsibilities and learn how to maintain accurate records, ensure vehicle compliance, and what to expect during an inspection; and	
(C)	explain the importance of having basic knowledge of routine maintenance requirements and how to conduct minor repairs.	
(6)	The student understands the non-driving aspects of commercial driving such as cargo handling, regulations, communication in emergencies, route planning, accident response, and controlled substances. The student is expected to:	
(A)	describe the required skills for proper cargo securement to ensure load stability, understand axle weight limits for even weight distribution for safe handling, and the necessary paperwork for different cargo types;	

(B)	describe how to comply with environmental regulations such as idling restrictions and handling prohibitions;	
(C)	describe the legal limitations on driving hours and the importance of rest for safety;	
(D)	explain and comprehend the impact of fatigue and stress management for safe driving;	
(E)	explain the protocols for safely securing the accident scene to prevent further risk or injury;	
(F)	describe ways to communicate effectively in emergencies;	
(G)	explain best practices for interacting with the public and other road users;	
(H)	list driver rights under federal law to report unsafe practices without fear of retaliation;	
(I)	explain how to show signs of coercion such as pressure to violate hours of service, and understand the steps to report unethical practices;	
(J)	explain the basics of route planning, load securement, and fuel management to ensure efficient and lawful travel;	
(K)	describe the rules applicable to controlled substances (including prescription drugs) and alcohol use and testing related to the operation of a CMV; and	
(L)	explain the Federal rules on medical certification, medical examination procedures, general qualifications, responsibilities, and disqualifications based on various offenses, orders, and loss of driving privileges.	