Diesel Equipment Technology II (Proc 17)

PRE-TEST/POST-TEST TEKS BLUEPRINT

Pre-Test/Post-Test Development Overview

TEKS Addressed Selection Process

The Texas Essential Knowledge & Skills (TEKS) included in the course pre-test and post-test were selected for their direct relevance to the course content. This selection process was guided by the goal of assessing learners' understanding of specific topics and skills that are integral to the course. As a result, TEKS related to general employability skills or broader topics were often excluded. This focus ensures that the assessments accurately measure students' mastery of the subject matter, allowing educators to gain a clear insight into areas where students excel or may need additional support. By concentrating on content-specific TEKS, the tests provide a more precise evaluation of the students' knowledge and understanding of the core material.

Test Question Development Process

The questions created for the pre-test and post-test were designed using psychometric principles to ensure they are of high quality and fairness. This approach helps to accurately assess student understanding. These principles guide the development of questions to be reliable, valid, and free from bias, ensuring that they effectively measure the knowledge and skills the students are expected to acquire in the course.

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Knowledge & Skills Statement	Student Expectation	iCEV Lesson Title
(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:	(E) demonstrate knowledge and skills related to health and safety in the workplace	Basic Shop Safety: Elevated Work & Fall Protection Basic Shop Safety: Non-Mechanical Hazards Basic Shop Safety: Mechanical Hazards Personal & Occupational Health & Safety
(2) The student demonstrates academic skills related to the requirements of transportation technology. The student is expected to:	(C) demonstrate mathematical skills and precision measurements using the metric and U.S. standard systems	Math & Measurement in Engine Technology
(3) The student demonstrates technical knowledge and skills of diesel equipment service and repair. The student is expected to:	(A) describe the function of the major components of diesel powered vehicles and equipment such as engines; fuel injection systems; lubrication, cooling, electrical, and air-conditioning systems; and air induction, exhaust, and emissions systems	Diesel Technology: Systems Maintenance Diesel Technology: Fuel System Diesel Technology: Air Intake System & Battery
(3) The student demonstrates technical knowledge and skills of diesel equipment service and repair. The student is expected to:	(B) perform system diagnostics and failure analyses	Diesel Technology: Systems Maintenance
(3) The student demonstrates technical knowledge and skills of diesel equipment service and repair. The student is expected to:	(C) describe the function of the chassis components such as braking, steering, transmission, drivetrain, suspension systems, pneumatics, and hydraulics	Diesel Technology: Systems Maintenance
(3) The student demonstrates technical knowledge and skills of diesel equipment service and repair. The student is expected to:	(D) diagnose, repair, and replace auxiliary equipment such as power take offs, hydraulic components, and pneumatic components	Diesel Technology: Systems Maintenance
(3) The student demonstrates technical knowledge and skills of diesel equipment service and repair. The student is expected to:	(E) locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair information and technical bulletins	Engine Industry Documents
(3) The student demonstrates technical knowledge and skills of diesel equipment service and repair. The student is expected to:	(F) perform precision measurements and use published specifications to diagnose component wear and determine necessary repair or replacement	Diesel Technology: Tools and Equipment Identification, Safety and Operation
(4) The student demonstrates the application of the tools, equipment, technologies, and materials used in diesel equipment diagnosis, service , and repair . The student is expected to:	(A) demonstrate safe use of hand and power tools and equipment commonly employed in diesel equipment technology	Diesel Technology: Tools and Equipment Identification, Safety and Operation
(4) The student demonstrates the application of the tools, equipment, technologies, and materials used in diesel equipment diagnosis, service , and repair . The student is expected to:	(B) demonstrate the proper handling and disposal of environmentally hazardous materials generated in the servicing of diesel equipment	Diesel Technology: Equipment Maintenance
(4) The student demonstrates the application of the tools, equipment, technologies, and materials used in diesel equipment diagnosis, service , and repair . The student is expected to:	(C) describe emerging diesel technologies	Emerging Technologies in the Engine Service Industry
(4) The student demonstrates the application of the tools, equipment, technologies, and materials used in diesel equipment diagnosis, service , and repair . The student is expected to:	(D) perform the proper use of diagnostic tools and equipment	Diesel Technology: Systems Maintenance
(4) The student demonstrates the application of the tools, equipment, technologies, and materials used in diesel equipment diagnosis, service , and repair . The student is expected to:	(E) demonstrate knowledge of hydraulic/pneumatic properties, controls, and safety	Diesel Technology: Systems Maintenance
(5) The student applies the technical knowledge and skills of diesel equipment technology to simulated or actual work situations. The student is expected to:	(B) demonstrate procedures for the diagnosis, removal, repair, and replacement of engine components such as cylinder heads, engine blocks, timing components, crankshafts, intake and exhaust systems, and ancillary and auxiliary systems	Diesel Technology: Valves & Cylinder Heads
(5) The student applies the technical knowledge and skills of diesel equipment technology to simulated or actual work situations. The student is expected to:	(C) diagnose, service, and repair diesel equipment systems such as braking, steering, suspension, pneumatic, and hydraulic systems	Diesel Technology: Systems Maintenance
(5) The student applies the technical knowledge and skills of diesel equipment technology to simulated or actual work situations. The student is expected to:	(D) diagnose and repair electrical and electronic systems such as starting, charging, lighting, computer controls, and on board diagnostics systems and components such as modules, solenoids, sensors, actuators, relays, and switches	Diesel Technology: Systems Maintenance

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(5) The student applies the technical knowledge and skills of diesel equipment technology to simulated or actual work situations. The student is expected to:	(E) demonstrate an understanding of the diagnosis, service, and repair of air-conditioning, heating, and accessory systems	Diesel Technology: Systems Maintenance
(5) The student applies the technical knowledge and skills of diesel equipment technology to simulated or actual work situations. The student is expected to:	(F) diagnose, service, and repair chassis and power train systems	Diesel Technology: Systems Maintenance
(5) The student applies the technical knowledge and skills of diesel equipment technology to simulated or actual work situations. The student is expected to:	(G) service and repair cooling and lubrication systems such as water pumps, oil pumps, radiators, and oil coolers	Diesel Technology: Systems Maintenance
(5) The student applies the technical knowledge and skills of diesel equipment technology to simulated or actual work situations. The student is expected to:	(H) use appropriate diagnostic equipment on various diesel equipment systems	Diesel Technology: Tools and Equipment Identification, Safety and Operation