UTAH SYSTEM OF HIGHER EDUCATION

Utah System of Higher Education
Diesel Technology
FY2025 / 29 Credits (870 Clock-Hours)

Foundational Courses

TEDT 1010 Introduction to Diesel Technology — **2 Credits / 60 Clock-Hours**

Introduction to Diesel Technology course provides students an introduction to Heavy-Duty commercial vehicles, including available careers and the skills and certifications required. Students will receive instruction in safety, personal protection equipment, the use of basic tools and shop equipment.

Objectives:
• Demonstrate a safety-oriented mindset and always ensure a safe working environment.
• Demonstrate the proper use of the tools and equipment needed to work in the diesel industry.
• Demonstrate the ability to measure, identify and repair fasteners and hoses related to the diesel industry.

TEDT 1100 Electrical I — **4 Credits / 120 Clock-Hours**

Electrical I provides theory and hands-on instruction on the principals of electricity, basic components, sensors, circuits, wiring schematics, and multi-meters.

Objectives:
• Identify electrical systems associated with diesel vehicles.
• Explain basic electrical circuits and how they work.
• Discuss battery, starting circuits, and charging systems and their proper function.

TEDT 1110 Electrical II — **4 Credits / 120 Clock-Hours**

In the Electrical II course, students learn advanced electrical theory and diagnostic procedures.

Objectives:
• Diagnose electrical systems associated with diesel vehicles.
• Interpret electrical schematics and apply them to the diesel industry.
• Demonstrate basic use of computer guided electrical diagnostics as it pertains to engine chassis and braking systems.

TEDT 1200 Steering and Suspension — **4 Credits / 120 Clock-Hours**

The Steering and Suspension course provides theory and hands-on instruction on the maintenance and repair of front axles, alignment, truck frames, steering and suspension systems, and coupling devices.

Objectives:
• Safely work on and around steering and suspension systems.
• Identify the major steering and suspension components related to Class 6,7, and 8 trucks.
• Diagnose, adjust, and repair steering and suspension systems related to Class 6, 7, and 8 trucks.

TEDT 1300 Brakes **4 Credits / 120 Clock-Hours**

Brakes provides theory and hands-on instruction on heavy duty braking systems. Students will learn maintenance and repair of wheels and tires, hubs and wheel bearings, air brake systems, drum and rotor brakes, Anti-lock braking system (ABS), and hydraulic braking systems.

Objectives:
• Maintain vehicle safety through safe brake maintenance and repairs.
• Identify and repair the major components related to truck air foundation brake systems.
• Identify and repair truck air disk brake systems.

TEDT 1400 Drivetrain **4 Credits / 120 Clock-Hours**

In this Drivetrain course, students receive theory and hands-on instruction on maintenance and repair of the heavy-duty drive train systems. Topic will include clutches, transmissions, drive lines, and differentials.

Objectives:
• Identify the major components of the drivetrain system.
• Explain the function of the drivetrain systems.
• Repair, replace, and diagnose drivetrain system components related to the transportation industry.

TEDT 1600 Engines I **4 Credits / 120 Clock-Hours**

Engines I provides theory and hands-on instruction in basic operation, parts, and overhaul procedures of diesel engines. Students learn the removal, service, and repair of engine blocks, crankshafts, pistons, rings, connecting rods, camshafts, valve trains, injection pumps, and accessories.

Objectives:
• Identify the major components of the internal combustion diesel engine.
• Explain the function of the major components of the internal combustion diesel engine.
• Disassemble, inspect, and reassemble the major components of a diesel engine.

TEDT 1610 Engines II **3 Credits / 90 Clock-Hours**

Engines II provides the student with more advanced theory and hands-on instruction in diagnostics and operational systems of the internal combustion engine, including emissions, fuel, and after-treatment systems.

Objectives:
• Identify the type of diesel fuel system and explain its operation.
• Identify the components of modern diesel engines emission systems.
• Explain how modern diesel emission systems components function to meet current EPA standards.
• Service, diagnose, and repair internal combustion engines, fuel, and emission aftertreatment systems.

Supplemental Courses Varies by Institution

Bridgerland

TEDT 1500 Preventative Maintenance I **1 Credit / 30 Clock-Hours**

The Preventative Maintenance I course introduces students to the service and preventive maintenance practices found within the trucking industry. Instruction includes inspection and maintenance of truck and trailer systems, engine systems, electrical systems, frame, and steering components.

Objectives:
• Discuss preventative maintenance and why it is so important for safety and productivity of the diesel industry.
• Inspect all truck systems and determine vehicles meets safe working standards.
• Demonstrate the service and maintenance of commercial truck systems.

TEDT 1700 Hydraulics **2 Credits / 60 Clock-Hours**

The Hydraulics course provides theory and hands-on instruction of fluid power as used in modern mobile equipment. Topics include the operation and repair of hydraulic/pneumatic components and systems. This course emphasizes testing, troubleshooting, design, and use of hydraulic schematics.

Objectives:
• Explain the dangers of working with hydraulics and how to safely eliminate them.
• Identify and explain the proper function of basic hydraulic systems.
• Diagnose and repair hydraulic systems.

TEDT 1800 Heating, Ventilation, and Air Conditioning (HVAC) **3 Credits / 90 Clock-Hours**

Heating, Ventilation, and Air Conditioning (HVAC) provides students with theory and hands-on instruction regarding troubleshooting and repair of heavy-duty truck air conditioning systems. Topics include condensers; check valves; driers; compressors; evaporators; controls; heating and cooling systems and controls; and refrigerant handling.

Objectives:
• Discuss the function of the heating ventilation and air conditioning systems.
• Demonstrate proper use of an HVAC recovery machine.
• Diagnose, repair, and recharge vehicle HVAC systems in accordance with EPA laws and regulations.

Davis

TEDT 1500 Preventative Maintenance I **1 Credit / 30 Clock-Hours**

The Preventative Maintenance I course introduces students to the service and preventive maintenance practices found within the trucking industry. Instruction includes inspection and maintenance of truck and trailer systems, engine systems, electrical systems, frame, and steering components.

Objectives:
• Discuss preventative maintenance and why it is so important for safety and productivity of the diesel industry.
• Inspect all truck systems and determine vehicles meets safe working standards.
• Demonstrate the service and maintenance of commercial truck systems.

TEDT 1700 Hydraulics **2 Credits / 60 Clock-Hours**

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Objectives:
• Explain the dangers of working with hydraulics and how to safely eliminate them.
• Identify and explain the proper function of basic hydraulic systems.
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Objectives:
• Discuss the function of the heating ventilation and air conditioning systems.
• Demonstrate proper use of an HVAC recovery machine.
• Diagnose, repair, and recharge vehicle HVAC systems in accordance with EPA laws and regulations.

Dixie

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Objectives:
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• Demonstrate proper use of an HVAC recovery machine.
• Diagnose, repair, and recharge vehicle HVAC systems in accordance with EPA laws and regulations.

Mountainland

TEDT 1500 Preventative Maintenance I **1 Credit / 30 Clock-Hours**

The Preventative Maintenance I course introduces students to the service and preventive maintenance practices found within the trucking industry. Instruction includes inspection and maintenance of truck and trailer systems, engine systems, electrical systems, frame, and steering components.

Objectives:
• Discuss preventative maintenance and why it is so important for safety and productivity of the diesel industry.
• Inspect all truck systems and determine vehicles meets safe working standards.
• Demonstrate the service and maintenance of commercial truck systems.

TEDT 1810 Heating, Ventilation, and Air Conditioning (HVAC) **2 Credits / 60 Clock-Hours**

Heating, Ventilation, and Air Conditioning (HVAC) provides students with theory and hands-on instruction regarding troubleshooting and repair of heavy-duty truck air conditioning systems. Topics include condensers; check valves; driers; compressors; evaporators; controls; heating and cooling systems and controls; and refrigerant handling.

Objectives:
• Discuss the function of the heating ventilation and air conditioning systems.
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TEDT 1510 Preventative Maintenance II **3 Credits / 90 Clock-Hours**

This course covers identification of additional components on the truck. It teaches the importance of doing inspections and preventative maintenance for heavy duty trucks, and of following recommended practices from manufacturers.

Objectives:
• Discuss each section of the tuck and help the students identify components and basic services.
• Discuss the importance and safety protocols of a full inspection on a truck.
• Perform pre-trip inspections on a truck, and the truck systems.
• Create a preventative maintenance schedule, including where you can find the information from manufacturers.

Salt Lake

TEDT 1500 Preventative Maintenance I **1 Credit / 30 Clock-Hours**

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Objectives:
• Discuss preventative maintenance and why it is so important for safety and productivity of the diesel industry.
• Inspect all truck systems and determine vehicles meets safe working standards.
• Demonstrate the service and maintenance of commercial truck systems.

TEDT 1700 Hydraulics **2 Credits / 60 Clock-Hours**

The Hydraulics course provides theory and hands-on instruction of fluid power as used in modern mobile equipment. Topics include the operation and repair of hydraulic/pneumatic components and systems. This course emphasizes testing, troubleshooting, design, and use of hydraulic schematics.

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• Explain the dangers of working with hydraulics and how to safely eliminate them.
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Snow

TEDT 1000 Diesel Safety and Basics **1 Credit / 30 Clock-Hours**

This course provides proper knowledge and practices in safety to help establish working habits that would reflect industry standards and result in a safe working environment. It also introduces students to tools, measuring equipment, and basic diesel service procedures.

Objectives:
• Demonstrate safety of general shop safety, hazardous waste, under-car safety, under-hood safety, hybrid vehicle safety.
• Identify locations and proper usage of fire extinguishers, eye wash stations, first aid stations, and exhaust handling equipment.
• Properly usage of hand tools and metric and standard measuring tools.
• Follow safe and proper procedures for preforming basic services on diesel vehicles.

TEDT 1700 Hydraulics **2 Credits / 60 Clock-Hours**

The Hydraulics course provides theory and hands-on instruction of fluid power as used in modern mobile equipment. Topics include the operation and repair of hydraulic/pneumatic components and systems. This course emphasizes testing, troubleshooting, design, and use of hydraulic schematics.

Objectives:
• Explain the dangers of working with hydraulics and how to safely eliminate them.
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USU - Eastern

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Objectives:
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TEDT 1700 Hydraulics **2 Credits / 60 Clock-Hours**

The Hydraulics course provides theory and hands-on instruction of fluid power as used in modern mobile equipment. Topics include the operation and repair of hydraulic/pneumatic components and systems. This course emphasizes testing, troubleshooting, design, and use of hydraulic schematics.

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