

DIESEL TECHNOLOGY (DSL)

DSL F101 Safety Including Rigging and Lifting

1 Credit

Offered Fall

Materials covered will be the importance of and proper use of personal protective gear and air ventilation systems; how to identify harmful chemicals in a shop atmosphere and how to use them in a safe manner; the importance of identifying the weight of an item before lifting with lifting equipment or by hand, and proper lifting procedures of heavy items when using a lifting device.

Lecture + Lab + Other: 1 + 0 + 0

DSL F103 Basic Equipment and Truck Operation

1 Credit

Offered Fall

Basic operation of heavy equipment and diesel trucks to include: stating, clutching, braking, and steering procedures. Basic forklift operation to include: lifting weight, calculation and point of balance of machine versus lifting load.

Lecture + Lab + Other: 0.5 + 1.5 + 0

DSL F105 Preventive Maintenance

3 Credits

Offered Fall

Perform scheduled preventive maintenance on vehicles and heavy equipment. Gain knowledge of lubricants, filters, lubrication points and proper fluid levels and understanding of what to look for when performing a visual inspection.

Prerequisites: DSL F101; DSL F103.

Lecture + Lab + Other: 1.5 + 3 + 0

DSL F107 Basic Electrical Systems and Electronic Fuel Injection

3 Credits

Offered Fall

DC voltage and amperage, fuses, circuit breakers, relays and junction boxes will be covered along with an understanding of wiring schematics and identification of and repair of lighting.

Lecture + Lab + Other: 1.5 + 3 + 0

DSL F110 Basic Industrial Fabrication

2 Credits

Offered Fall

Students will learn the concepts of industrial fabrication. When working with heavy equipment, things can break. This class will teach the basics of how to fabricate and repair heavy equipment in and out of the field using various techniques.

Prerequisite: Department or Instructor approval required.

Lecture + Lab + Other: 1 + 2 + 0

DSL F111 Diesel Emissions

2 Credits

Offered Spring

Students will learn the concepts of diesel engine emissions and how diesel emissions significantly contribute to air pollution. Knowledge of how to create cleaner running diesel engines, promote pollution-control technology, prevent unnecessary idling, and ultimately, make that puff of smoke that can come from these engines an image of the past. We will study and practice the actions taken to reduce diesel emissions using measuring devices, learn the terms and technologies of catalytic converters, particulate filters, the use diesel exhaust fluid, and be able to troubleshoot emission components.

Prerequisite: Department or Instructor approval required.

Lecture + Lab + Other: 1 + 2 + 0

DSL F123 Heavy Duty Braking Systems

3 Credits

Offered As Demand Warrants

Braking systems for commercial trucks and heavy equipment applications; compressor testing and overhaul, relay valves, actuators, wear limits, acceptable tolerances, brake lining replacement, government regulations and pneumatic controls; evolving technologies such as anti-lock brakes. Remove and replace brake shoes, drums, hardware, S-cams and air chambers. Includes the inspection, preventive maintenance and overhaul of a commercial truck or heavy equipment braking system.

Prerequisites: DSL F101; DSL F103.

Lecture + Lab + Other: 1.5 + 3 + 0

DSL F154 Diesel Fuel Injection

3 Credits

Offered Fall

Theory and functional operation of all common diesel fuel injection systems including those produced by modern Bosch, Mack, Cummins, Caterpillar and Detroit Diesel. Direct injection and pre-combustion fuel injection systems. Testing procedures, when testing high pressure diesel injection pumps and injectors as well as removing, installing and adjusting the most common systems used in the heavy truck and heavy equipment industry.

Lecture + Lab + Other: 2 + 2 + 0

DSL F201 Manual Transmissions and Differentials

3 Credits

Offered As Demand Warrants

Theory, diagnosis and repair of manual transaxles and transmissions, transfer cases, differentials, clutch assemblies, power take off units, driveshafts and axles as well as removing and installing clutches, transmissions and differentials in a truck or piece of heavy equipment. Preventive maintenance and cold weather component problems will also be covered.

Prerequisites: DSL F101; DSL F103.

Lecture + Lab + Other: 1 + 4 + 0

DSL F202 Heavy Duty Automatic Transmissions

2 Credits

Offered Spring

Theory, operation and troubleshooting of heavy duty automatic transmissions; hydraulic, electrohydraulic, pneumatic and electronic controls. Prepares the student to overhaul Allison, ZF and similar automatic transmissions.

Lecture + Lab + Other: 1 + 3 + 0

DSL F210 Heavy Equipment Fabrication

2 Credits

Offered Spring

Students will learn advanced concepts of industrial fabrication in the maintenance of heavy duty equipment, develop a strong understanding of metals and their applications, and have the ability to bend, heat, and apply welding techniques that will support heavy duty equipment for long term use.

Prerequisite: Department or Instructor approval is required.

Lecture + Lab + Other: 1 + 2 + 0

DSL T F254 Engine

5 Credits

Offered Fall

Understanding the two cycle and four cycle diesel engine. Performing tune-ups, as well as disassembling and reassembling a modern diesel engine commonly found in the heavy truck or heavy equipment industry.

Prerequisites: DSL T F101; DSL T F103; DSL T F105.

Lecture + Lab + Other: 2.5 + 5 + 0