

# DIESEL TECHNOLOGY (DSLTL)

## **DSLTL-104 Safety and Introduction to Shop Practices** **2 Credits**

**Lecture:** 1 hour per week, **Lab:** 2 hours per week

**Offering:** Fall Only, All Years

This course will cover the theory and application of shop safety, tool and equipment usage, precision measuring, basic welding, and oxyacetylene skills.

## **DSLTL-117L Diesel Lab** **2 Credits**

**Lab:** 6 hours per week

**Offering:** Summer Only, All Years

This course provides students with hands-on exposure in a shop setting on the subjects covered in the DSLTL-137 theory class. Instruction utilizes a variety of mock-ups, training aids, components, and limited live customer work. Primary emphasis will be placed on suspension system and steering diagnostics and repair.

## **DSLTL-123L Diesel Engines/Electrical Systems Lab** **6 Credits**

**Lab:** 12 hours per week

**Offering:** Fall Only, All Years

This course will give students hands-on exposure in a shop setting to those subjects covered in the DSLTL-123 theory class. This instruction will utilize a variety of mock-ups, training aids, components, and limited live customer work.

## **DSLTL-124 Powertrain/Brake Systems** **5 Credits**

**Lecture:** 3 hours per week, **Lab:** 6 hours per week

**Offering:** Spring Only, All Years

This course will teach students the operation, construction, service, and repair of heavy-duty clutch systems, manual transmissions, drivelines, universal joints, single and two-speed differentials, as well as axles and bearings. This course will also teach students the operation, construction, service, and repair of heavy truck and equipment air systems, foundation air brake systems, foundation hydraulic brake systems, as well as wheels and seals.

**Corequisites:** DSLTL-124L

## **DSLTL-124L Powertrain/Brake Systems Lab** **6 Credits**

**Lab:** 12 hours per week

**Offering:** Spring Only, All Years

This course will give students hands-on exposure in a shop setting to those subjects covered in the DSLTL-124 theory class. This instruction will utilize a variety of mock-ups, training aids, components, and limited live customer work.

**Corequisites:** DSLTL-124

## **DSLTL-125 Diesel Engines** **2 Credits**

**Lecture:** 1 hour per week, **Lab:** 3 hours per week

**Offering:** Fall Only, All Years

This course will include instruction on the basics of how to identify, repair, rebuild, and/or replace diesel engines. Students will learn two-stroke and four-stroke combustion engine theory as well as engine performance criteria. Instruction will include the operation and basic principles of various diesel engine components and their respective systems.

## **DSLTL-126 Electrical Systems** **3 Credits**

**Lecture:** 2 hours per week, **Lab:** 2 hours per week

**Offering:** Fall Only, All Years

This course will cover troubleshooting and repair procedures for heavy-duty electrical systems, including electrical principles as they relate to the components used in trucks and heavy equipment, writing schematics, and lighting along with the associated testing and repair procedures for each system. Topics include basic electricity fundamentals, starting, and charging systems, batteries, troubleshooting, and lighting systems.

## **DSLTL-133 Introduction to Electrical** **1 Credit**

**Lecture:** 1 hour per week

**Offering:** Fall Only, All Years

This course will cover fundamental electrical theory concepts and basic electrical system formulas.

## **DSLTL-137 Suspension/Steering and A/C** **2 Credits**

**Lecture:** 2 hours per week

**Offering:** Summer Only, All Years

This course teaches students the operation, components, and repair of various truck and heavy equipment suspension systems. Instruction will include spring, pad, and air components, adjustments, and alignment procedure for truck steering systems. Instruction also covers the theory, operation, components, and repair of mobile air conditioning systems.

**Corequisites:** DSLTL-117L

## **DSLTL-203 Basic Hydraulic Systems** **2 Credits**

**Lecture:** 2 hours per week

**Offering:** Spring Only, All Years

This course covers basic hydraulic system principles and concepts, plus hydraulic components. Exposure to simple hydraulic formulas will also be covered.

## **DSLTL-223 Advanced Tune-Up/Computerized Engines** **4 Credits**

**Lecture:** 2 hours per week, **Lab:** 6 hours per week

**Offering:** Fall Only, All Years

This course will teach students how to troubleshoot, adjust, repair, or replace components associated with tune-up procedures for diesel engines. Exhaust emissions and other environmental issues pertaining to diesel engines will also be discussed. Students will also learn the operation, construction, and repair techniques associated with diesel fuel systems and induction systems. The course will provide students with the opportunity to become aware of the principles of theory for control devices, governors, and other controls related to diesel engines. This course will also teach students how to test, troubleshoot, adjust, repair, or replace components associated with computerized engines. Students will also learn the operation, construction, and theory of computerized engine controls.

**Corequisites:** DSLTL-223L

**Recommended Prerequisites:** DSLTL-133

**DSLTL-223L Advanced Tune-Up/Computerized Engines Lab****6 Credits****Lab:** 12 hours per week**Offering:** Fall Only, All Years

This course will give students hands-on exposure in a shop setting to those subjects covered in DSLTL-223 theory class.

This instruction will utilize a variety of mock-ups, training aids, components, and limited live customer work.

**Corequisites:** DSLTL-223**Recommended Prerequisites:** DSLTL-123L, DSLTL-133**DSLTL-224 Undercarriage/Powershift Transmissions And Hydraulics****4 Credits****Lecture:** 2 hours per week, **Lab:** 6 hours per week**Offering:** Spring Only, All Years

This course teaches students the operation, construction, and repair of heavy equipment undercarriages and heavy-duty power-shift transmissions. Instruction covers construction and repair of various power-train components used in the heavy equipment industry. Students will also gain an understanding of the operation, construction, and theory of torque converters and final drives. This course will also teach students the theory of operation, construction, adjustment, maintenance, and repair of heavy equipment hydraulic systems. Students will also learn how to design hydraulic systems and implement changes to existing hydraulic systems.

**Corequisites:** DSLTL-224L**DSLTL-224L Undercarriage/Powershift Transmissions And Hydraulics Lab****6 Credits****Lab:** 12 hours per week**Offering:** Spring Only, All Years

This course gives students hands-on experience in a shop setting. It is designed to provide opportunities for application of subjects covered in the DSLTL-224 theory class. Instruction will utilize a variety of mock-ups, training aid, components, and limited live customer work.

**Corequisites:** DSLTL-224