

**NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
DSL 143 - DIESEL TRUCK ELECTRICAL SYSTEMS (4 CR.)**

Course Description

Studies the theory and operation of various truck and tractor electrical systems. Covers preheating, starting, generating, and lighting systems. Uses modern test equipment for measurement, adjustment, and troubleshooting. Lecture 2 hours per week. Laboratory 4 hours. Total 6 hours per week.

General Course Purpose

This course is part two of a two part series of heavy-duty truck electrical systems and places particular emphasis on truck/equipment accessory systems. Detailed trouble shooting diagnosis and repair procedures using modern testing equipment is covered in depth. Particular attention is given to determining electrical systems defects, their probable cause, and what repairs and adjustments are required for correction. Lecture demonstrations will cover in detail fundamentals and theory of operation of accessory systems. Students will develop an understanding of each of these electrical systems to include its construction, purpose, service requirements, and how it functions in modern heavy-duty trucks and diesel equipment.

Course Prerequisites/Co-requisites

Prerequisite is DSL 141 or instructor approval. Ability to read, write, and speak the English language.

Course Objectives

Upon completion of this course, the student should have a:

- Working knowledge of analog and digital instrumentation
- Troubleshoot and repair heavy-duty truck starters
- Troubleshoot and repair heavy-duty truck alternators
- Working knowledge of basic electronic circuits used in the heavy-duty trucks
- Working knowledge of possible system defects, troubleshooting procedures, diagnosis, repair and adjustment techniques of electronic ignition systems
- Working knowledge of electronic engine controls, possible defects, troubleshooting procedures, diagnosis, repair and adjustment techniques

Major Topics to be Included

- Charging systems
- Electrical diagnosis and procedures
- Horns and buzzer warning systems
- Instrument panel gauges and indicator lights
- Electric windshield wipers and washers
- General electrical system diagnosis
- Electrical and electronic basics review
- Electronic test equipment, including digital volt, ohm and amp meter use