Revised 1/2010

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
DSL 153 – POWER TRAINS I (3 CR.)

Course Description

Focuses on manual, hydrostatic, and heavy-duty automatic transmissions. Examines various types of power trains and their components, such as multidisc clutch, multi-speed transmissions, torques, drive lines, and differentials. Includes disassembly and assembly of various components. Part I of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

General Course Purpose

This course is designed to provide the student with a comprehensive knowledge of medium/heavy-duty truck front and rear axle assemblies, clutches, manual and automatic transmissions and drivetrain components. Emphasis is placed upon trouble-shooting techniques, repair, and adjustment.

Course Prerequisites/Co-Requisites

Ability to read, write, and speak the English language.

Course Objectives

Upon completion of this course, the student will be able to:

- Explain how a pinion and crown gearset change the direction of powerflow
- Disassemble and reassemble a differential assy
- Identify the types of axles used on trucks and trailers
- Remove and replace a truck driveline assembly
- Explain the importance of drive shaft phasing
- Outline the operating principles of a clutch
- Identify the types of gears used in truck transmissions
- Explain the relationship between speed and torque from input to output in different gear arrangements

Major Topics to be Included

- Single and multi-disk clutches
- Various types of differential assemblies
- Manual Transmissions
- Automatic Transmissions
- Single and multi-piece driveshafts