

**NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY  
DSL 150 – MOBILE HYDRAULICS AND PNEUMATICS (3 CR.)**

**Course Description:**

Introduces the theory, operation and maintenance of hydraulic/pneumatic systems and devices used in mobile applications. Emphasizes the properties of fluid, fluid flow, fluid states and application of Bernoulli's equation. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week. 3 credits

**General Course Purpose**

To provide students with a basic understanding of mobile hydraulic/pneumatic systems and their design.

**Course Prerequisites/Co-requisites**

This course does not have a pre-requisite, but the students should have adequate, high school level reading and comprehension skills in English. Also, the student should have the ability to perform basic math skills including fractions.

**Course Objectives**

Upon completing the course, the student will be able to:

- Explain fundamental hydraulic principles
- Apply the laws of hydraulics and pneumatics
- Calculate force, pressure and area
- Interpret Hydraulic and Pneumatic schematics
- Outline the properties of fluids
- Describe the functions of pumps, motors, valves, and actuators

**Major Topics to be Included**

- Pascal's Law and its effect on hydraulic/pneumatic systems
- Read and layout various hydraulic/pneumatic schematics
- Identification and operation of various types of hydraulic/pneumatic pumps and motors used in mobile systems
- Identification and operation of various types of valves used in hydraulic/pneumatic systems
- Identification and operation of various filtration and hydraulic storage systems