

# HYD-110 Hydraulics/Pneumatics I

## **COURSE DESCRIPTION:**

Prerequisites: None

Corequisites: None

This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting. Course Hours Per Week: Class, 2. Lab, 3. Semester Hours Credit, 3.

## **LEARNING OUTCOMES:**

Upon completing requirements for this course, the student will be able to:

1. Identify and demonstrate safe practices and procedures with tools, materials and industry accepted test equipment covered in the course.
2. Demonstrate appropriate use of test equipment, evaluate circuit performance and apply appropriate troubleshooting techniques to fluid power systems.
3. Identify components of fluid power systems using symbols and schematics.
4. Assemble a fluid power system
5. Calculate and demonstrate the basic physics of fluid mechanics.

## **OUTLINE OF INSTRUCTION:**

- I. Introduction to Fluid Power, Basic Principals of Hydraulics
- II. Hydraulic Pumps
- III. Hydraulic Cylinders
- IV. Hydraulic Motors
- V. Hydraulic Directional Control
- VI. Hydraulic Pressure Control
- VII. Hydraulic Flow Control
- VIII. Ancillary Hydraulic Components
- IX. Basic Principals of Pneumatics

## **REQUIRED TEXTBOOK AND MATERIAL:**

The textbook and other instructional material will be determined by the instructor.