
SECTION HEADING

MECH 1103: Basic Hydraulics

Description

Basic Hydraulics introduces the students to basic concepts, formulas and applications of hydraulic system components. Studies the use of directional, flow and pressure control devices in circuits. Also provides students with the knowledge and understanding of the operation, function, and application of hydraulic pumps and actuators.

Credits

3

Prerequisite

None

Corequisite

None

Topics to be Covered

1. Pascal's Law
2. Bernoulli's Principle and Bernoulli's Theorem
3. Energy transition through fluid
4. Torque, Pressure and Velocity
5. Pressure in series/parallel circuits
6. Force, Work, and Power
7. Flow
8. Pressure drop
9. Directional, flow and pressure control devices
10. Hydraulic pumps, motors, and cylinders

Learning Outcomes

1. Address safety issues related to hydraulics systems
2. Identify different components of a hydraulic system.
3. Describe hydraulic principles.
4. Discuss Pascal's Law, Bernoulli's Principle and Bernoulli's Theorem.
5. Apply calculations and equations to basic hydraulics.
6. Utilize hydraulic symbols and schematics.

Credit Details

Lecture: 3

Lab: 0

OJT: 0

MnTC Goal Area(s): None