
SECTION HEADING

MECH 1105: Hydraulics Lab

Description

Hydraulics lab examines basic equipment and fundamentals of hydraulic valves of fluid power. Focus will also cover various flow controls, pumps and motors. Students will tear down, plumb and operate the various components

Credits

1-3

Prerequisite

None

Corequisite

None

Topics to be Covered

1. Shop safety precautions, practice and emergency responses.
2. Flow and pressure and pressure drop testing.
3. Pump, actuators, and control valve teardown and test.
4. Hydraulic pump/ motor efficiency test.
5. Design and test hydraulic circuits using various actuators, flow control valves, pressure control valves and directional control valves.
6. Identify various fittings.
7. Calculate and measure hydraulic circuit variables.

Learning Outcomes

1. Identify and control potential safety hazards and implement safe working practices.
2. Disassemble directional control valves, pressure control valves, flow control valves, pumps, motors, actuators and perform functional tests.
3. Design and assemble circuits using sequence, unloading, counterbalance, brake, and pressure reducing valves.
4. Identify and apply various methods of flow, pressure, and directional control.
5. Identify various fittings.
6. Connect, operate, and measure hydraulic circuits with various components.
7. Troubleshoot basic hydraulic systems.

Credit Details

Lecture: 0

Lab: 1-3

OJT: 0

MnTC Goal Area(s): None