SECTION HEADING

MECH 2110: Circuit Design and Control Theory

Description

Circuit Design and Control Theory provides student instruction in design and function of hydrostatic drives, mobile valves, pump controls, and power steering.

Credits

3

Prerequisite

MECH 1103

Corequisite

None

Topics to be Covered

1. Power transmission types and purpose
2. Open loop and closed loop hydraulic circuits
3. Pump controls and applications
4. Design and selection of hydrostatic system components.
5. Mobile and industrial valve identification and function.
6. Mobile valve components, circuits and applications.
7. Power steering components and applications.
8. Open and closed center circuit comparisons.
9. Hydraulic servo controls and components.
10. Pressure compensation.

Learning Outcomes

1. Identify, calculate, and select components used to operate hydrostatic drives.
2. Determine proper function of mobile and industrial hydraulic valves.
3. Determine proper function of pump and system controls.
4. Identify components and operation of power steering systems.
5. Identify power transmission types and purpose.
6. Describe advantages/disadvantages of open or closed loop control.
7. Describe manual and electronic servo systems.
8. Draw symbols and schematics for mobile hydraulic applications.

Credit Details

Lecture: 3

Lab: 0

OJT: 0

MnTC Goal Area(s): None