

ME 464 – Hydraulic Systems

Hour: Lecture: 2 Hrs.

Tutorial: 2 Hrs.

Credit: 3.

Coordinator: Salem Haggag

Text Book:

- Anthony Esposito, “Fluid Power”, Prentice-Hall International, 1997, 4th edition.

Reference Books:

- MJ Pinches & JG Ashby, “Power Hydraulics”, Prentice Hall, 1989, 1st edition.
- Frank Yeaple, “Fluid Power Design Handbook”, Marcel Dekker Inc, 1996, 3rd edition.

Specific course information

- a. Introduction to fluid power system -Fluid controlling elements -Valve and simple circuits – Hydraulic cylinder - Actuators – Hydraulic motor and fluid- Shock absorbers- Hydraulic servomechanisms – Hydraulic cranes – Hydraulic coupling and torque converters.
- b. Prerequisite: ME 362
- c. Designation: Selected Elective

Specific goals for the course:

- Design and conduct experiments, and collect, analyze and interpret data.
- Understand professional and ethical responsibilities. Demonstrate ethical practice.
- Use oral, written, and audio-visual techniques effectively for successful communication.
- Recognize the need for and demonstrate ability to engage in lifelong learning.
- Ability to put forward the design requirements and considerations and manage the different design steps for any mechanical systems.

Course instruction outcomes:

- The student will acquire deep understanding of the theoretical methods and practical techniques in the area of hydraulic power systems

Topics Covered:

- Introduction to Fluid Power Systems
- Hydraulic Fluids and Transmission Lines
- Hydraulic Pumps
- Fluid Power Actuators (Cylinders, Rotary Actuators, Motors)
- Control Components of Hydraulic Systems
- Accumulators and Pressure Intensifiers
- Hydraulic Circuit Design and Analysis

Course / credit hours	Math & Basic Sciences	Engineering Topics	General Education
Hydraulic Systems(ME464)/3		3	