Hydraulics & Pneumatics

Course Information

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BMM 4703
Hydraulics & Pneumatics

Lecturer :

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B.Eng (Mech), UTM (2003)

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PhD (Manufacturing System), Cranfield, UK (2013)

Hydraulics & Pneumatics

- **Synopsis**
  - This course introduces hydraulic system, hydraulic components, hydraulic system design, pneumatics system, pneumatic components, pneumatic system design, electro fluid power system and its design, as well as programmable logic controller (PLC) and its design.

Timetable

- Lecture: Monday 08.00 – 10.00 am
- Laboratory: Wednesday 08.00 – 10.00 am
- Attendance is compulsory (Refer to Item 8.1 in Academic Guide & Regulations 2016)

Course Objective

By the end of semester, students should be able to:

- CO1: Explain and apply basic hydraulic system knowledge
- CO2: Explain and apply basic pneumatic system knowledge
- CO3: Design and analyze electro fluid power system with electro components
- CO4: Design and analyze hydraulic and pneumatic system using Programmable Logic Controller
- CO5: Apply related software and equipment to simulate and setting up hydraulic and pneumatic system

Contents

- Chapter 1: Hydraulics
- Chapter 2: Pneumatics
- Chapter 3: Electro-hydraulics and Electro-pneumatics
- Chapter 4: Programmable Logic Controller

Contents

- Chapter 1
  - Pressure, Force and Energy
  - Hydraulic Components
  - Hydraulic Pumps
  - Hydraulic Circuit Design

Contents

- Chapter 2
  - Introduction to Pneumatic
  - Basic Pneumatic Circuit
  - Advanced Pneumatic Circuit
- Chapter 3
  - Basic Electro-fluids Components
  - Design of Electro-fluid Circuit

Contents

- Chapter 4
  - Introduction too PLC
  - Fundamental of PLC Programming
  - Ladder Diagram Design
  - Design of PLC Repeated Sequence

References

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