Hydraulics & Pneumatics

Course Information

by
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Lecturer:

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• **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

- OckerTh. (1999), Hydraulics Workbook Advanced Level, Festo Didactic GmbH & Co.