Faculty of Eng. & Natural Sci.

ME308-202301
Industrial Control

Instructor(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Office</th>
<th>Phone</th>
<th>Web</th>
<th>Office Hours</th>
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<tbody>
<tr>
<td>Kemalettin Erbatur</td>
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<td>Please take an appointment in the lecture hours or via e-mail contact.</td>
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Course Content

This is an course that covers industrial control systems. The specific topics include: control systems architectures; transducers and actuators; communications in industrial control systems - industrial LANs; sequential control - programmable logic controllers; direct digital control and supervisory control; structures of SCADA systems; case studies.

Objectives

To provide the students with the foundations of modern industrial control in the machine automation context.

Recommend or Required Reading

Readings

Pdf documents related to Siemens S7 300 PLCs, Beckhoff industrial PCs.

Optional Readings

Title: Automated Manufacturing Systems
Author: S. Brian Morriss
Year: 1994
Assessment Methods and Criteria

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<th>Percentage(%)</th>
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<td>Homework</td>
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Course Outline

Week 1:
Introduction
PLC (Programmable Logic Controller)
Resources
Hard wired logic

Week 2:
PLC
Ladder Logic Program (LAD)

Week 3:
PLC
Statement List Program (STL)
Linear Programming
Partitioned Programming

Week 4:
PLC - Structured Programming
Learning Outcomes

List main types of industrial automation systems and industrial actuation and sensor systems
Identify the individual design steps in an industrial automation project.
Design automation systems with industrial control components.
Compare different industrial control strategies.
Draw wiring diagrams.
Program Programmable Logic Controllers (PLC) and Industrial Robots
Develop Graphical User Interfaces
Work with industrial communication networks
Wire and instrument basic industrial sensors and actuators.
Develop skills to adapt industrial control components to their automation design.
Develop problem solving and planning skills and work effectively as part of a team

Course Policies

This is a physical-only course.
Attendance to a minimum of 70% of lectures is required to be admitted to the final exam.
More than 70% attendance earns participation points.
Pop quizzes.
Weekly laboratory work (week 2-week 13, weeks subject to change.)