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## SECTION HEADING

### MECH 2136: Programmable Logic Controllers

#### Description

Programmable Logic Controllers introduces students to Programmable Logic Controllers (PLC) used in industrial systems. This course identifies components and functions of PLC's along with the communication and programming software. Students develop skills in designing, wiring, programming, operating, and troubleshooting Programmable Logic Controller circuits.

#### Credits

3

#### Prerequisite

MECH 1135

#### Corequisite

None

#### Topics to be Covered

1. Programmable Logic Controller (PLC) identifications and function
2. Analog and digital theory
3. PLC installation and wiring
3. PLC hardware
4. Input and Output Field Devices and modules
5. PLC Communications
6. Programming and communication software
7. PLC logic programming

#### Learning Outcomes

1. Identify and control potential safety hazards and implement safe working practices.
  1. Describe PLC industry function.
  2. Describe PLC program methods.
  3. Design PLC logic circuits.
  4. Describe various manufacturing hardware layout.
  5. Identify and wire Input/Output field devices.
  6. Demonstrate communications setup.
  6. Troubleshoot PLC wiring and programming logic.

#### Credit Details

Lecture: 1

Lab: 2

OJT: 0

MnTC Goal Area(s): None