Programmable Logic Controllers (PLC)

Developed Date: 06/2024

Credit Hours: 3

Description:
This course examines types, installation, programming procedures, and troubleshooting of programmable logic controllers (PLC). Hardware and programming aspects as well as ladder logic symbols and operations necessary to develop a PLC program are covered in this course. *(NOTE: This course is used in the Automation Engineer Technology and Industrial Machine/Maintenance Technology programs.)*

Competencies:

- Demonstrate safety procedures when working with PLCs.
- Connect a PLC to a programming device with proper wiring and terminations of inputs and outputs.
- Identify the types, components, and basic operation of a PLC, including the primary function and the various basic components.
- Identify the numbering systems and symbols used in PLC relay ladder logic.
- Describe addressing and the function of tags, how PLC module terminals are referenced by tag names, and the application of module-defined tag structures.
- Describe the purposes of the power supply, input/output (both discrete and analog), processor and programming sections of a PLC, and the function and operation of I/O diagrams and module indicator lights.
- Develop a functional PLC program using appropriate programming languages.
- Demonstrate the execution of a created PLC program, including monitoring of the PLC operation, and running and stopping a PLC processor file.
- Demonstrate the process of PLC system troubleshooting, including I/O sections of a PLC and related field devices.

Note: Institutions may add additional competencies based on local demand.