MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

Faculty members are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT. MECH   COURSE NUMBER:2136

NUMBER OF CREDITS: 3 Lecture: 2   Lab: 1

Course Title:
Programmable Logic Controllers

Catalog Description:
This course demonstrates the use of programmable logic controllers and circuits to control and power all phases of industrial automation.

FULFILLS MN TRANSFER CURRICULUM AREA(S)

Goal 1: Communication: _____ by meeting the following competencies:

Goal 2: Critical Thinking: _____ by meeting the following competencies:

Goal 3: Natural Sciences: _____ by meeting the following competencies:

Goal 4: Mathematics/Logical Reasoning: _____ by meeting the following competencies:

Goal 5: History and the Social and Behavioral Sciences: _____ by meeting the following competencies:

Goal 6: The Humanities and Fine Arts: _____ by meeting the following competencies:

Goal 7: Human Diversity: _____ by meeting the following competencies:

Goal 8: Global Perspective: _____ by meeting the following competencies:

Goal 9: Ethical and Civic Responsibility: _____ by meeting the following competencies:

Goal 10: People and the Environment: _____ by meeting the following competencies:

Prerequisites or Necessary Entry Skills/Knowledge:
MECH1125 and MECH1135

Topics to be Covered

1. Basic Programmable Logic Controller (PLC) theory.
2. Analog and digital theory.
3. PLC hardware.
4. Input/Output Field Devices.
5. PLC and system interfacing.
6. PLC installation and startup procedures.
7. PLC maintenance.
8. Troubleshooting principles and testing for hardware and software.

Student 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. Troubleshoot PLC wiring and programming logic.

Is this course part of a transfer pathway: Yes ☐   No ☒

Revised Date: **05/2020**