

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: 2120

NUMBER OF CREDITS: 5 Lecture: 2 Lab: 3

Course Title:

Automated Systems

Catalog Description:

Provides students with an understanding of and the ability to use programmable logic controllers, human machine interfaces, drives, controllers, and other hardware 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, MECH1135, MECH2136

Topics to be Covered

1. Controller, drive, and interface theory.

2. Hardware.
3. Programming.
4. Automated system interfacing and communications.
5. Controller, drive, and interface installation and startup procedures.
6. Advanced control circuits.
7. Operator interfaces.
8. Troubleshooting principles and testing for hardware and software.

Student Learning Outcomes

1. Identify and control potential safety hazards and implement safe working practices.
2. Discuss, drive, interface, and software theory.
3. Identify hardware components for equipment used in an automated system.
4. Demonstrate the ability to wire hardware components.
5. Create programs using various software platforms.
6. Install and configure drivers used to establish communications to hardware.
7. Design logic programs to control industrial equipment and processes.
8. Troubleshoot hardware and software issues that arise in automated systems.

Is this course part of a transfer pathway: Yes No

Revised Date: 05/2020