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: 1125

NUMBER OF CREDITS: 2   Lecture: 1 Lab: 1

Course Title:
Electrical Controls I

Catalog Description:
Introduces basic electrical concepts. Students will be introduced to electrical theory, electrical safety hazards and requirements, and electrical circuit wiring and measurement. Students will learn to identify electrical control components used in an industrial environment and apply the concepts necessary for designing, wiring, troubleshooting, and operation of electrical control circuits.

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: None
None
## Topics to be Covered

1. Electrical quantities and basic circuits.
2. Symbols and diagrams.
3. Test instruments.
4. Electrical safety.
5. Control logic.
6. Input control devices.
7. Solenoids.
8. Relays and Timers.
9. AC and DC circuits and components.

## Student Learning Outcomes

1. Identify and control potential safety hazards and implement safe working practices.
2. Analyze electrical quantities and basic circuits.
3. Interpret symbols and diagrams.
4. Perform circuit measurements using test instruments.
5. Design, connect and operate basic electrical control circuits.
6. Troubleshoot electrical control circuits.

### Is this course part of a transfer pathway?

- Yes ☐
- No ☒

Revised Date: 05/2020