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. _ELCO_ COURSE NUMBER: _1110_
NUMBER OF CREDITS: _3_ Lecture: _2_ Lab: _1_

Course Title:
AC/DC I

Catalog Description:
Introduce students to electrical theory and practical experiences starting with DC electric circuits, electrical safety practices, and familiarization with training equipment using Ohm’s law and power.

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)
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:
Math 0092 or placement by exam
### Topics to be Covered (General)

- Safety
- Introduction to electricity
- Metric notation
- Multimeter measurements
- Resistors and color coding
- Ohms law and power
- Relays and meters
- Basic AC/DC circuits
- Series, parallel, and combination circuits
- Electromagnetic principles
- Pre-algebraic formulas

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### Student Learning Outcomes

- Apply the use of a meter with electricity and Ohm’s
- Apply safe tactics on the job with electricity
- Calculate and use electrical terms
- Troubleshoot series, parallel, and combination circuits
- Measure voltage and current with a meter
- Describe how to color code resistors
- Identify hazards associated with electricity
- Identify an insulator and conductor
- Describe series, parallel, and combination circuits
- Apply complex circuits

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

- Yes ☐
- No ☒

*If yes, please list the competencies below*