DEPT. ELEC          COURSE NUMBER: 2205

NUMBER OF CREDITS: 4   Lecture: 1   Lab: 3

Course Title:
Electric Motor Controls I

Catalog Description:
Instruct students in the use of electrical tools, instruments, safety equipment, electrical symbols, line diagrams, AC manual contactors and motor starters, AC magnetic contactors and motor starters, time delay logic and control devices.

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:
ELCO 1100 or ELCO 1110
### Topics to be Covered (General)
- Basic motor control circuits
- Relays, contactors and motor starters
- Timing circuits
- Reversing Circuits

### Student Learning Outcomes
- Identify motor control symbols
- Interpret ladder, schematic and wiring diagrams
- Describe control relay, contactor and motor starters
- Describe motor overload protection
- Describe motor short circuit-ground fault protection
- Describe motor jogging circuit
- Describe 2-wire and 3-wire control circuits
- Describe on-delay and off-delay timing circuits
- Describe reversing circuits
- Wire 2-wire and 3-wire control circuits
- Wire motor jogging circuits
- Wire timing circuits
- Wire reversing circuits
- Troubleshoot motor control circuits

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

*If yes, please list the competencies below*

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Revised Date: 02/14/2020