

# MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

## COURSE OUTLINE

**DEPT. ELEC**

**COURSE NUMBER: 2205**

**NUMBER OF CREDITS: 4**

**Lecture: 1 Lab: 3 OJT: 0**

### Course Title:

Electric Motor Controls I

### Catalog Description:

Motor Controls I instructs 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.

### Prerequisites or Necessary Entry Skills/Knowledge:

ELCO 1100 or ELCO 1110

### 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:

### Topics to be Covered

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**

Revised Date: 02/14/2020