

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. MECH

COURSE NUMBER: 1125

NUMBER OF CREDITS: 2

Lecture: 1 Lab: 1 OJT: 0

Course Title:

Electrical Controls I

Catalog Description:

Electrical Controls I 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.

Prerequisites or Necessary Entry Skills/Knowledge:

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:

Topics to be Covered

Electrical quantities and basic circuits.

Symbols and diagrams.

Test instruments.

Electrical safety.

Control logic.

Input control devices.

Solenoids

Relays and Timers.

AC and DC circuits and components.

Student Learning Outcomes

Identify and control potential safety hazards and implement safe working practices.

Analyze electrical quantities and basic circuits.

Interpret symbols and diagrams.

Perform circuit measurements using test instruments.

Design, connect and operate basic electrical control circuits.

Troubleshoot electrical control circuits.

Is this course part of a transfer pathway: Yes No

***If yes, please list the competencies below**

Revised Date: 1/26/2022