MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

DEPT. ELUT **COURSE NUMBER: 2121**

NUMBER OF CREDITS: 2 **Lecture: 1 Lab: 1 OJT 0**

Course Title:
Protective Relays

Catalog Description:
Protective Relays is designed to give a broad understanding of simple relays that are used in the protection of high voltage lines and substations. Emphasis is on understanding design, construction, and application, performing testing, calibrating, cleaning and adjusting relays. The following relays will be studied if time allows: overcurrent induction disc, thermal overcurrent, induction disc voltage, over/under voltage, voltage restraint, percentage differential, and transformer differential relays.

Prerequisites or Necessary Entry Skills/Knowledge:
None

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
Installation, testing and calibrating of simple and compound relays.

Student Learning Outcomes
Describe the design, construction, application, function, and perform testing of overcurrent induction disc relays.
Describe the design, construction, application, function, and perform testing of thermal overcurrent relays.
Describe the design, construction, application, function, and perform testing of induction disc voltage relays.

Describe the design, construction, application, function, and perform testing of voltage controlled overcurrent induction disc relays.
Describe the design, construction, application, function, and perform testing of voltage restraint overcurrent induction disc relays.
Describe the design, construction, application, function, and perform testing of directional overcurrent induction relays.
Describe the design, construction, application, function, and perform testing of percentage differential relays and transformer differential relays.

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

Revised Date: October, 2020