

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. ELPL

COURSE NUMBER: 1121

NUMBER OF CREDITS: 4

Lecture: 1 Lab: 3 OJT 0

Course Title:
Electrical Distribution of Powerlines III

Catalog Description:
Electrical Distribution of Powerlines III covers the function, operation, and types of fuses, circuit breakers, oil circuit reclosures and sectionalizers. Working with and around electrical equipment, and apparatus in substations will also be covered. Students will learn about the characteristics of transient voltages, types of distribution arrestors and safety. The course will also cover building overhead lines, stringing and sagging conductors, and ties and tying. Students will build OCR banks, capacitor banks, and three-phase transformer banks, work with underground distribution lines, connect sectional cabinets and pad-mounted transformers, and loop-feed URD lines. Tree trimming, and pole-top and bucket rescue will also be discussed.

Prerequisites or Necessary Entry Skills/Knowledge:
ELPL1116

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
Pole setting for three-phase overhead lines
Regulator stations
Capacitor banks, breaker banks, and three-phase transformer banks
Secondary Metering
Substation equipment
Wishbone transmission lines and three phase lines

Student Learning Outcomes

Demonstrate pole setting for three-phase lines
Build regulator station
Build capacitor bank
Build breaker bank
Build three-phase transformer bank
Install secondary metering
Install substation equipment
Build wishbone transmission lines
Retire three-phase lines
Clean up pole sight and building
Install security lighting

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

Revised Date: October, 2020