

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. ELUT

COURSE NUMBER: 1110

NUMBER OF CREDITS: 3

Lecture: 2 Lab: 1 OJT 0

Course Title:
Transformer Banking I

Catalog Description:
Transformer Banking I covers the construction, purpose, uses, and calculations for distribution transformers. Emphasis will be on installation of single or three-phase banking practices that are used in the private and public sector of the electric utility industry.

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
Wye, Delta, and Parallel transformer banks
Basic electrical theories and principles
Single phase, v phase, and 3 phase transformer connection

Student Learning Outcomes
Define: step-down transformers, step-up transformers, transformer efficiency, exciting current, ampere-turns, and primary winding to secondary winding voltage and current ratios.
Explain and calculate the correct voltage, current, and frequency operating requirements for transformers.

Describe and calculate a dual load, three phase, four wire service connected in delta-delta, delta-wye, wye-wye, wye-delta, open wye-open delta, and open delta-open delta.
Diagram and explain the standard procedures for making a delta-delta, delta-wye, wye-wye, wye-delta, open wye-open delta, and open delta-open delta using single-phase transformers
Connect both underground and overhead transformers in the following banks: parallel two transformers, a delta-delta, delta-wye, wye-wye, wye-delta, open wye-open delta, and open delta-open delta
Classify special transformers according to their use and application.

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

Revised Date: October, 2020