Faculty members are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT. ELUT COURSE NUMBER: 1110

NUMBER OF CREDITS: 3 Lecture: 2 Lab: 1 OJT 0

Course Title:
Transformer Banking I

Catalog Description:
This course 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


2. Explain and calculate the correct voltage, current, and frequency operating requirements for transformers.

3. 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.

4. 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.

5. 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.

6. Classify special transformers according to their use and application.

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

Revised Date: October, 2020