# 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 ☒ |  |

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