DEPT. ELUT COURSE NO. 1110

NUMBER OF CREDITS: 3

COURSE TITLE Transformer Banking 1

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.

AUDIENCE: Persons that would like to major in Construction Electricians, Powerline or the Electric Utility field.

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: (ELCO1100) Electrical Circuits Fundamentals, (ELUT1110) Transformer Banking 1

LENGTH OF COURSE 1 semester

THIS COURSE IS USUALLY OFFERED:
Every other year fall X spring summer undetermined

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT: Math, Reading

2) THINKING SKILLS: Matching drawings and voltages to different transformer banks.

3) COMMUNICATIONS SKILLS: Must communicate well with others and communicate problems well that will arise in the field.

4) HUMAN DIVERSITY:

TOPICS TO BE COVERED: Wye, Delta, and Parallel transformer banks.

LIST OF EXPECTED COURSE OUTCOMES: The student will:

2. State the standards governing transformer polarity developed by the ASA and NEMA and the correct way to test for polarity in the field.

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

4. 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.

5. 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.

6. 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.

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

LEARNING/TEACHING TECHNIQUES used in the course are:
X Collaborative Learning  X Problem Solving
  Student Presentations  X Interactive Lectures
X Creative Projects  X Individual Coaching
X Lecture  X Films/Videos/Slides
X Demonstrations  Other (describe below)
X Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:
X Reading  X Tests  X Individual Projects
  Oral Presentations  X Worksheets  Collaborative Projects
X Textbook Problems  X Papers  Portfolio
X Group Problems  Term Paper
Other (describe below)

EXPECTED STUDENT LEARNING OUTCOMES: The student should be able to distinguish the difference between wye and delta transformer banks and the differences between wye and delta voltages. The student should be able to figure single and three-phase load calculations.

The information in this course outline is subject to revision.

Veteran Services: Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or Minnesota Relay Service at 800-627-3529 or by using your preferred relay service.

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