Faculty is 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. ELWT COURSE NUMBER: 1235

NUMBER OF CREDITS: 1 (Lab)

COURSE TITLE: Electrical Calculations

CATALOG DESCRIPTION: Covers the applications of the many mathematical problems, principles, and concepts encountered by technicians in the field. This course makes reference to many industrial standards along with the National Electric Code (NEC).

AUDIENCE: Students who want to learn AC calculations.

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)
Area: by meeting the following competencies:
Area: by meeting the following competencies:
Area: by meeting the following competencies:

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE:

LENGTH OF COURSE: 1 semester

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

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

1) ACADEMIC CONTENT: The academic objectives of this course are:
   a. Introduce Alternating Current
   b. Understand electrical formulas
   c. Apply formulas to equations

2) THINKING SKILLS: This course will help students improve the effectiveness of their thinking skills through:
   a. Solving problems using formulas
   b.
   c.
   d.
3) COMMUNICATIONS SKILLS: This course will help students improve their oral and written communication skills through:
   a. Group interactions with questions and answers
   b. Students working problems on white board communicating with other students.

4) HUMAN DIVERSITY: This course will help students recognize, understand, and appreciate human diversity through:
   a. Students helping students no matter the race or gender.
   b.

TOPICS TO BE COVERED: Using Trigonometric functions to solve problems, find acute angles of a right triangle, find the sides of a right triangle, determine values from a graph, find the instantaneous values, maximum values, and phase angles of an AC wave, determine the effective value of an AC wave, use the Pythagorean theorem, determine power, explain how inductance is created along with inductive devices, Explain how capacitance is created and write equations for capacitance, find solutions for resistance and capacitance, along with other electrical calculations.

LIST OF EXPECTED COURSE OUTCOMES:

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

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

EXPECTED STUDENT LEARNING OUTCOMES:

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.

A Member of the Minnesota State Colleges and Universities System
An Affirmative Action Equal Opportunity Educator/Employer