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: ELCO       COURSE NUMBER:  1120

NUMBER OF CREDITS:  3       1 Credit of Lecture and 2 Credits of Lab

COURSE TITLE:     AC/DC II

CATALOG DESCRIPTION: Covers the basic concepts of AC and DC circuits. Included is a basic study of resistive circuits, inductive circuits, capacitive circuits, circuit analysis, resonance, oscilloscope operation, capacitance, capacitive reactance, inductance, inductive reactance, RC and L/R time constants, and three phase circuits.

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE:     ELCO 1110

LENGTH OF COURSE: 1 Semester

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

TOPICS TO BE COVERED: Safety, introduction to Alternating Current, training and equipment familiarization, generating AC electricity, non-sinusoidal sine waves, resistance in AC circuits, inductors, RL series, parallel, and troubleshooting circuits, capacitors, RC series, parallel, and troubleshooting circuits, RCL series, parallel and troubleshooting circuits, transformer action and troubleshooting.

LIST OF EXPECTED COURSE OUTCOMES: Safety, to analysis the theory of AC by using oscilloscopes and Volt- Ohm Meters. To also understand the theory of reactance, capacitance, inductance, RC/ RL Time Constance, and resistive circuits.

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

- X Reading
- X Tests
- X Individual Projects
- □ Oral Presentations
- X Worksheets
- X Collaborative Projects
- X Textbook Problems
- X Papers
- | Portfolio
- X Group Problems
- Term Paper
- □ Other (describe below)

EXPECTED STUDENT LEARNING OUTCOMES:

1) Students will be expected to complete discussions, worksheets, quizzes, and test over the assigned material.
2) Students will be expected to turn in all assignments on time. Each time an assignment is not turned in, a total of 10% will be taken off per week until the assignment is handed in.
3) Students will be expected to complete all in-class work SAFELY.

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 Services 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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