Faculty 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 Collegewide Curriculum Committee.

DEPT. Robotics                COURSE NO. ROBT 1126

NUMBER OF CREDITS: 2

COURSE TITLE: Advanced AC Concepts Lab

CATALOG DESCRIPTION: An opportunity to practice those skills learned in ROBT1121. A hands-on approach to design and wiring of power supply, 3 phase power, and motor control circuits. (Concurrent with ROBT 1121)

AUDIENCE

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

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE:

LENGTH OF COURSE: (2 C/ 0 lect/pres, 2 lab, 0 other)

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 student will receive the knowledge and skills to function in industry.

2) THINKING SKILLS: The student will be able to design, setup, wire, and troubleshoot power supply, 3 phase power and motor starter circuits.

3) COMMUNICATIONS SKILLS: The student will begin to demonstrate appropriate communications both oral and written.

4) HUMAN DIVERSITY: The student will gain self-awareness regarding their feelings towards people of different cultures, value systems and socioeconomic status.

TOPICS TO BE COVERED:

1. explain safety practices and student responsibilities
2. build half-wave rectification
3. build full-wave circuits
4. measure full-wave circuits
5. measure half-wave circuits
6. troubleshoot half-wave rectification
7. troubleshoot full-wave circuits
8. build filter networks
9. troubleshoot bridge rectifiers
10. design power supply
11. troubleshoot power supplies
12. design specified 3 phase motor starter circuit
13. design 3 phase reversing motor starter circuit
14. connect 3 phase motor starter circuit
15. connect 3 phase reversing motor starter circuit
16. troubleshoot 3 phase motor starter circuit
17. troubleshoot 3 phase reversing motor starter circuit
18. design 3 phase motor starter w/ transformer circuit
19. design 3 phase reversing motor starter w/ transformer circuit
20. wire 3 phase motor starter w/ transformer circuit
21. wire 3 phase reversing motor starter w/ transformer circuit
22. wire 220 volt primary transformer
23. wire 440 volt primary transformer
24. wire 3 phase motor for low voltage
25. wire 3 phase motor for high voltage voltage
26. design solid state 3 phase motor starter circuit
27. wire solid state motor starter circuit

LIST OF EXPECTED COURSE OUTCOMES:

LEARNING/TEACHING TECHNIQUES used in the course are:

X Grid Collaborative Learning  X Grid Problem Solving
□ Student Presentations  □ Interactive Lectures
□ Creative Projects  □ Individual Coaching
□ Lecture  □ Films/Videos/Slides
X Grid Demonstrations  □ Other (describe below)
X Grid Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:

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

EXPECTED STUDENT LEARNING OUTCOMES:
To receive accommodations for a documented disability, please contact the campus Student Services Advisor as soon as possible. Students are also encouraged to notify the instructor.

This document can be made available in alternative format by contacting Student Services, the Campus CEOs or calling Minnesota Relay Service at 1-800-627-3529. Reasonable accommodations will be provided upon request for documented disabilities. An Affirmative Action Equal Opportunity Educator/Employer. ADA Accessible.

*The information in this course outline is subject to revision.*