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.

COURSE TITLE: Electric Motor Controls II  COURSE NUMBER: ELEC 2225

COURSE DESCRIPTION:
This course covers reversing motor circuits, electromechanical and solid state relays, photoelectric controls, proximity controls, reduced voltage starting, accelerating and decelerating methods and preventive maintenance. The lab class will give the student the opportunity to hard wire and operate the control circuits. Students design control circuits and program smart controllers and variable frequency drives.
4 Credits (1 lect/pres, 3 lab, 0 other)

COURSE GOALS:
The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives. (*designates a CRUCIAL goal)

1. exhibit safe work practices
2. describe photoelectric controls
3. wire photoelectric control circuits
4. describe liquid level controls
5. wire liquid level controls
6. describe proximity controls
7. wire proximity control circuits
8. describe pressure controls
9. wire pressure control circuit
10. describe flow controls
11. describe diode logic controls
12. wire diode logic control circuits
13. describe logic control functions
14. describe solid-state logic controls
15. wire solid-state logic controls
16. describe duplex pump circuit operation
17. wire duplex pump control circuit
18. describe complex pilot devices
19. wire complex pilot devices
20. wire limit switches
21. describe DC variable speed drives
22. describe AC variable speed drives
23. compare AC/DC variable speed drives
24. analyze DC drive circuitry
25. analyze AC drive circuitry
26. describe inverter circuitry
27. describe converter circuitry
28. compare mechanical variable speed drives
29. describe preventive maintenance procedures
30. wire AC variable speed drive
31. test rotating phase converter
32. test static phase converter
33. wire solid state starters
34. wire variable speed DC drive

ATTENDANCE:
Students will be required to attend a minimum of 95% to satisfactorily complete this course.

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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