COURSE TITLE: Programmable Logic Controllers                        COURSE NUMBER: ELEC 2230

COURSE DESCRIPTION:
This course covers the principles of how PLC's work and provide practical information about installing, programming and maintaining a PLC system. Students will be given a wide range of generic programming assignments and exercises for practice with the PLC.
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. organize work
*2. demonstrate lab safety
3. identify programmable controller (P.C.) parts
4. describe programmable controller (P.C.) terms
5. explain programmable controller (P.C.) functions
6. describe display areas
7. operate function keys
8. convert symbols
9. identify abbreviations
10. describe power flow
11. troubleshoot programmable controller (P.C.) circuit
12. program counters
13. program timers
14. program up counters
15. program down counters
16. control sequenced events
17. program retentative relays
18. combine counters/timers
19. operate external devices
20. describe programmable controller (P.C.) capabilities
21. describe programmable controller (P.C.) expandability and flexibility
22. identify digital logic symbols
23. describe truth tables
24. list programmable controller (P.C.) entry rules
25. identify error codes
26. use troubleshooting flow chart
27. design conveyor circuit
28. enter circuit
29. generate printed report
30. load PC program to tape
31. use data monitoring
32. use bit manipulation
33. use force on/off instruction
34. define shift register instruction
35. program shift file up/down
36. define sequencer instruction
37. program sequencer output operations
38. program sequencer input operations
39. program sequencer load operations
40. describe analog input unit
41. program analog input operation
42. describe analog output unit
43. program analog output operation
44. describe remote block operation
45. describe PC network operation
46. design PC layout

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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