COURSE TITLE: National Electric Code IV                              COURSE NUMBER: ELEC 2235

COURSE DESCRIPTION:
This course covers electrical grounding and calculations. The course will give students a better understanding of grounding and simplify some of the code requirements for acceptable field installations of grounding. This will result in a safer electrical installation for people and equipment.
(Prerequisites: ELEC 1205)
2 Credits (1 lect/pres, 1 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 objective. Students completing this course will develop skills which allow them to become familiar with a range of competencies associated with the National Electrical Code.

1. define grounding terms
2. describe grounding safety
3. describe grounding electrical theory
4. describe ground faults
5. describe grounding electrode system
6. calculate grounding electrode size
7. describe grounded conductor requirements
8. describe main bonding jumper requirements
9. describe equipment grounding conductor
10. describe equipment grounding conductor installation
11. describe equipment/enclosure bonding
12. describe equipment/enclosure bonding requirements
13. determine grounded circuit conductor requirements
14. describe equipment/enclosure grounding
15. identify ground fault equipment requirements
16. describe grounding of high voltage systems
17. define separately derived systems
18. describe grounding separately derived systems
19. identify multiple building grounding systems
20. describe agricultural building grounding systems
21. define equipotential plane
22. describe bonding and equipotential plane
23. calculate equipment grounding conductor size
24. calculate main bonding jumper size
25. calculate grounded conductor size
26. calculate grounding electrode conductor size to made electrode
27. calculate voltage drop
28. calculate commercial loads
29. calculate industrial loads
30. calculate residential loads
31. calculate conduit fill
32. calculate conductor size
33. calculate box fill
34. calculate motor conductor size
35. calculate motor fuse/breaker size
36. calculate motor overload size
37. calculate motor disconnect size
38. calculate feeder conductor size for multiple motors
39. calculate fuse/breaker size for multiple motors

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

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 also 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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