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: Commercial Wiring
COURSE NUMBER: ELEC 1240

COURSE DESCRIPTION:
This course introduces the material and design aspects of commercial wiring. Students will learn to read commercial blueprints. This course also covers voltage-drop calculations, motor calculations and service installations. Students will be introduced to the take off and estimating of commercial jobs. Students will also study the N.E.C. as it relates to commercial wiring.

<Prerequisites: ELEC1200>
5 Credits (1 lect/pres, 4 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. apply National Electrical Code (NEC)
3. use power tools
4. describe transformer installation requirements
5. recognize different service types
6. connect metering equipment
7. apply ground fault requirements
8. install temporary service
9. install service grounding system
10. identify commercial drawing symbols
11. calculate plan dimensions
12. calculate given area loading
13. determine minimum number circuits
14. calculate three-phase line current
15. calculate branch circuit protection
16. calculate feeder size
17. apply conductor derating factors
18. calculate circuit voltage drop
19. select remote control lighting components
20. connect low voltage systems
21. determine commercial loading requirements
22. select correct conduit sizes
23. select branch circuit conductors
24. layout conduit installation
25. select correct size switches
26. select correct size receptacles
27. install receptacles
28. identify NEMA plugs/receptacles
29. connect single pole, 3-way, and 4-way switch circuits
30. connect double pole switch circuits
31. select correct box size
32. specify raceway supports
33. splice conductors
34. calculate angle pull boxes
35. identify rigid fittings
36. complete flexible conduit installation
37. identify flexible conduit fittings
38. calculate box fill
39. identify raceway supports
40. identify wire connectors
41. identify aluminum installation procedures
42. calculate straight pull boxes
43. identify conduit bodies/cover
44. describe appliance disconnecting means
45. determine over current protection
46. complete loading schedule
47. complete material list
48. calculate system disconnect
49. install surface raceway
50. install multioutlet assembly
51. describe communication circuits
52. describe floor outlet installation
53. layout raceway system
54. complete raceway materials list
55. describe lamp installation
56. install lighting outlet
57. install lighting fixtures
58. identify luminaries
59. use fish tapes
60. select panel boards
61. select feeder size
62. define short circuit currents
63. calculate short circuit current
64. define coordination
65. describe interrupting rating

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

"This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal."

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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