

# Dakota County Technical College

## **ELEC 1130: National Electrical Code I**

### **A. COURSE DESCRIPTION**

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 1

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course covers the requirements of the National Electrical Code.

**B. COURSE EFFECTIVE DATES:** 01/13/2003 - Present

**C. OUTLINE OF MAJOR CONTENT AREAS**

#### **D. LEARNING OUTCOMES (General)**

1. Be able to determine the type of box needed for various applications
2. Be familiar with categories of branch circuits and know the difference
3. Be familiar with mounting and supporting provisions for boxes and conduit bodies
4. Be familiar with separately derived systems
5. Be familiar with the terminology, presentation, and format of the NEC
6. Calculate cu-in. capacity of boxes
7. Determine types of circuit conductors
8. Determine types of loads
9. Evaluate types of locations
10. Give a brief account of electricity in its infancy
11. Identify the catalyst that brought on the National Electric Code
12. Recognize various trademark logos that denote listed and labeled products
13. Understand box requirements when using non-metallic sheathed cable
14. Understand how the National Electric Code evolve
15. Understand the terminology of grounded and grounding
16. Be aware of raceway types other than conduit and tubing
17. Calculate the electrical trade-size conduit needed for projects
18. Calculate the minimum number of branch circuits in a residents
19. Determine what cables are permitted in space used for environmental air-handling purposes
20. Have a good understanding of conduit provisions
21. Know how cables must be installed in different applications
22. Know how to layout general purpose receptacles in a dwelling
23. Understand branch circuit ratings
24. Understand the ampacity of correction factors
25. Understand the characteristics of conductor properties
26. Understand the provision of parallel conductors
27. Understanding of conductor identifications
28. Adapt the electrical requirements needed for multi-family dwellings
29. Be familiar with commercial lighting requirements
30. Calculate the electrical requirements for a residential home
31. Calculate the electrical service and equipment for a residential home
32. Determine occupancy's general lighting load based on sq-ft area
33. Know the provisions of outdoor receptacles
34. Know the requirement for bathrooms, garages, and basements
35. Know the requirements for kitchens, dining, and breakfast areas
36. Understand article 430 motor provisions
37. Understand article 440 air-conditioning and refrigeration provisions
38. Understand the electrical provisions for appliances and equipment
39. Understand the elements and provisions of a commercial service and its equipment
40. Understand the elements required to perform a non-dwelling load calculation
41. Understand the general requirements for lighting and switches

**E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted