A. Course Description

- Credits: 2.00
- Lecture Hours/Week: 1.00
- Lab Hours/Week: 1.00
- OJT Hours/Week: 0
- Prerequisites: None
- Corequisites: None
- MnTC Goals: None

Construction is the systematic process of putting something together. Constructing electrical systems requires a variety of mechanical skills including, but not limited to, measuring, cutting, drilling, bending, fabricating, mounting, fastening, supporting, and terminating. These basic mechanical skills become the foundation for technical and specialized skills. As such, construction requires the efficient and safe use of numerous hand and power tools, as well as the techniques to use trade-specific tools. In addition, electrical work is a licensed and regulated occupation. It is important that students are made aware of the laws and rules governing licensing and registration so as not to find themselves facing the consequences of working unlawfully.

B. Course Effective Dates: 1/12/15 – Present

C. Outline of Major Content Areas

- As noted on course syllabus

D. Learning Outcomes

1. Classify bolts, screws and other mechanical fasteners by their size, type and purpose.
2. Demonstrate methods of supporting boxes and enclosures mounted into finished walls.
3. Demonstrate techniques used to remove broken bolts.
4. Demonstrate the proper and safe use of portable power tools used for electrical construction.
5. Demonstrate the proper selection and use of hand tools for electrical construction.
6. Demonstrate the proper use of various types of electrical connection, splicing and terminating devices.
7. Determine the physical characteristic of conductors for general wiring such as their size, material and insulation.
8. Drill and tap holes for bolts and screws.
9. Explain how the allowable ampacity of conductors can be determined.
10. Identify and demonstrate standard practices for good workmanship in electrical construction.
11. Identify and demonstrate the assembly of strut-type mounting and support systems.
12. Identify cable-type wiring methods using proper terminology.
13. Identify the proper torque values for mechanical terminations.
14. Identify the various types of device boxes, outlet boxes and other enclosures.
15. Identify trade sizes of raceway-type wiring methods.
16. Identify various methods used to secure and support wiring methods.
17. Identify various types of materials, wiring methods, equipment and fittings used in electrical construction.
18. Mount various sizes of electrical boxes and enclosures.
19. Neatly and accurately cut holes for device and outlet boxes in various types of finished walls.
20. Relate the State of Minnesota regulatory requirements for the personal licensing and registration of electrical workers, the licensing of contractors, the registering of employers and the inspection of electrical work.
21. Relate the experience requirements necessary to qualify for a personal license examination.
22. Torque electrical connections and their associated terminal connections to the prescribed value.
23. Understand the significance of using the proper terminology rather than ?trade slang?.
24. Use knockout punches to cut holes in enclosures.

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

F. Learner Outcomes Assessment
   
   As noted on course syllabus

G. Special Information

   None noted