A. **Course Description**
   - **Credits:** 3.00
   - **Lecture Hours/Week:** 2.00
   - **Lab Hours/Week:** 1.00
   - **OJT Hours/Week:** 0
   - **Prerequisites:** None
   - **Corequisites:** None
   - **MnTC Goals:** None

   This course covers the requirements of the National Electrical Code.

B. **Course Effective Dates:** 1/13/03 – Present

C. **Outline of Major Content Areas**
   - As noted on course syllabus

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

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

F. Learner Outcomes Assessment
   
   As noted on course syllabus

G. Special Information
   
   None noted