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 basic purpose and function of the various truck electrical systems, components, and instruments. Electrical theory, application, and diagnosis using typical test equipment will also be covered. Prerequisites: None

B. Course Effective Dates: 12/11/19 – Present

C. Outline of Major Content Areas

As noted on course syllabus

D. Learning Outcomes

1. Identify and explain the functions of the electrical elements of the atom.
2. Identify and describe conductors, insulators, and semiconductors.
3. Define and explain concepts of voltage amperage and resistance.
4. Calculate the energy concepts of voltage amperage and resistance.
5. Predict the effect of resistance on voltage and amperage in a circuit.
6. Predict the effects of increasing voltage and amperage in a circuit.
7. Explain the relationship between voltage amperage and resistance.
8. Describe the differences between alternating and direct current.
9. Calculate power consumption in an electric circuit.
10. Differentiate between measurement electrical units of voltage, amperage, and resistance.
11. Calculate power consumption in an electric circuit.
12. Calculate energy consumption in a heating circuit.
13. Define and describe types of electric circuits.
14. Describe the behavior of current flow in each type of electric circuit.
15. Identify and describe electrical circuit failures.
16. Describe the relationship between voltage amperage power and resistance in electrical circuits.
17. Mathematically predict and describe the relationship between voltage amperage power
18. Use wiring diagrams to diagnose electrical circuits

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

F. Learner Outcomes Assessment
   As noted on course syllabus

G. Special Information
   None noted