

Minnesota State College Southeast

ABCT 1303: Auto Body Electrical

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: *.*

Lab Hours/Week: 6

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course will give the student basic understanding of DC electricity through theory and hands-on experiments. Using the basic principles of DC theory, the student will use digital multi-meters, and interpret wiring diagrams and flow charts. Application to the automotive electrical system is then applied to trouble shoot and repair lighting systems, power accessories, air bag restraint systems, anti-lock brake systems, wipers, blower fans, and other common automotive body electrical systems and components. (Prerequisite: None) (3 Credits: 0 lec/3 lab)

B. COURSE EFFECTIVE DATES: 12/22/2004 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Perform required electrical readings on vehicles
2. Use service procedures and wiring diagrams
3. Diagnosis of computerized body systems

D. LEARNING OUTCOMES (General)

1. Demonstrate safe and professional practices
2. Describe electrical circuits
3. Operate digital meter
4. Identify electrical components
5. Measure voltage, current, and resistance
6. Identify electrical symbols
7. Describe electrical terms
8. Identify series circuits how they work
9. Identify parallel circuits and how they work
10. Identify series-parallel circuits and how they work
11. Locate opens and shorts in circuits
12. Perform battery service procedures
13. Demonstrate wiring harness repair
14. Explain proper wire harness routing
15. Test electric motors
16. Test automotive electrical components
17. Interpret automotive body circuit wiring diagrams
18. Explain electrical circuit and component operations
19. Perform vehicle electrical systems check
20. Develop electric circuit repair plan
21. Replace electrical system components
22. Analyze lighting circuits
23. Analyze power accessory circuits
24. Describe onboard computer service procedures
25. Diagnose computer controlled systems
26. Describe anti-lock brake system operation
27. Diagnose anti-lock brake system systems
28. Describe passive restraint system components
29. Diagnose air bag system faults
30. Replace air bag system components
31. Install automotive electrical accessories

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted