

Dakota County Technical College

AUTM 2100: Basic Automotive Electricity

A. COURSE DESCRIPTION

Credits: 1

Lecture Hours/Week: *.*

Lab Hours/Week: 1

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: AUTM 2136

MnTC Goals: None

This course covers basic automotive electrical theories, diagnosis, and repair procedures using various types of tools and test equipment and reference materials available in Alldata, Mitchell and your textbook.

B. COURSE EFFECTIVE DATES: 06/01/2010 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

D. LEARNING OUTCOMES (General)

1. Check continuity and resistances in electrical/electronic circuits and components with an ohmmeter; determine necessary action
2. Check electrical circuits using fused jumper wires; determine necessary action
3. Check electrical circuits with a test light; determine necessary action
4. Demonstrate the proper use of a digital multi-meter (DMM) during diagnosis of electrical circuit problems
5. Diagnose electrical/electronic integrity for series, parallel, and series-parallel circuits using principles of electricity (Ohm's Law)
6. Identify and interpret electrical/electronic system concern; determine necessary action
7. Inspect and test fusible links, circuit breakers and fuses; determine necessary action
8. Inspect and test switches, connectors, relays, solenoid solid state devices and wires of electrical/electronic circuits; perform necessary action
9. Locate shorts, grounds, opens, and resistance problems in electrical/electronic circuits; determine necessary action
10. Measure and diagnose the causes of abnormal key-off battery drain (parasitic draw); determine necessary action
11. Measure current flow in electrical/electronic circuits and components
12. Measure source voltage and perform voltage drop tests in electrical/electronic circuits using a voltmeter; determine necessary action
13. Perform solder repair of electrical wiring
14. Remove and replace terminal end from connector
15. Repair wiring harnesses (including LAN/CAN/BUS systems)
16. Repair wiring harnesses and connectors and terminal ends
17. Research applicable vehicle and service information, such as electrical/electronic system operation, vehicle service history, service precautions, and technical service bulletins
18. Use wiring diagrams during diagnosis of electrical circuit problems

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted