

# 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