



## AUTOMOTIVE ELECTRONICS 2 — AUTM 2127

### A. Course Description

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

This course covers automotive electronics and computer fundamentals. Operation, diagnosis, and repair of automotive accessory and Supplemental Restraint systems are studied using various types of tools and test equipment. Reference materials available through Alldata, Mitchell, Identifix, AC Delco, Subaru of America and the student textbook will be utilized. Prerequisites: AUTM 1003, 1013, 2117.

### B. Course Effective Dates: 8/21/17 – Present

### C. Outline of Major Content Areas

1. Accessory Circuits
2. Computer Fundamentals
3. Cruise Control Systems
4. Supplemental Restraint Systems

### D. Learning Outcomes

1. Check operation of electrical circuits with a test light.
2. Check operation of electrical circuits with fused jumper wires.
3. Demonstrate knowledge of electrical/electronic series, parallel, and series- parallel circuits using principles of electricity (Ohm's Law).
4. Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits.
5. Demonstrate proper use of a digital Multimeter (DMM) when measuring source voltage, voltage drop (including grounds), current flow, and resistance.
6. Diagnose (troubleshoot) incorrect operation of electric door lock circuits, including remote keyless entry; determine necessary action.
7. Diagnose body electronic system circuits using a scan tool; determine necessary

action

8. Diagnose incorrect heated glass, mirror, or seat operation; determine necessary action
9. Diagnose incorrect operation of cruise control systems; repair as needed
10. Diagnose incorrect operation of motor-driven accessory circuits; determine necessary action
11. Diagnose supplemental restraint system (SRS) concerns; determine necessary action
12. Diagnose the cause of false, intermittent, or no operation of anti-theft system
13. Disarm and enable the air bag system for vehicle service
14. Inspect and test fusible links, circuit breakers, and fuses; determine necessary action.
15. Perform solder repair of electrical wiring.
16. Remove and reinstall door panel
17. Replace electrical connectors and terminal ends
18. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.
19. Use wiring diagrams to trace electrical/electronic circuits.

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

**F. Learner Outcomes Assessment**

As noted on course syllabus

**G. Special Information**

None noted