

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: AUT 181 **Credits:** 4

Course Title: Electrical I - OEM

Course Description:

Studies basic electrical systems, properties, operation, diagnosis, and service and repair. Introduces diagnostic procedures, diagnosing electronically controlled circuits, computer controls, and communication systems. Develops diagnostic strategies to locate and repair basic electrical faults on non-multiplexed systems. Focuses on performing voltage drop testing on chassis electrical systems, starting, and charging systems. This course is intended for students in an original equipment manufacturer (OEM) training program. Part I of III. Lecture 2 hours. Laboratory 8 hours. Total 10 hours per week. 4 credits

General Course Purpose:

This course is intended for students in an OEM training program to provide specific instruction and hands-on practice of the OEM's chassis electrical systems with a focus on developing appropriate diagnostic strategies. The course focuses on the tools and equipment, strategies for inspection, service, and repair of OEM-specific vehicles.

Course Prerequisites and Co-requisites:

- **Prerequisite:**
 - Acceptance and good standing in the original equipment manufacturer (OEM) training program.
- **Co-Requisite:**
 - None

Student Learning Outcomes:

Upon completing the course, the student will be able to

- Prepare to sit for the A6 – Electrical/Electronic Systems ASE examination
- Accurately predict and measure DVOM measurements in a series and parallel circuit
- Use available wiring diagrams and resources to locate and repair electrical faults on electrically-controlled and non-electronically controlled chassis circuits
- Diagnose no-crank, no-start conditions
- Diagnose no-charge conditions

Major Topics to Be Included:

- Electrical properties, measurements, and components
- Reading wiring diagrams and predicting voltages
- Electronically and non-electronically controlled chassis electrical systems
- Battery, starting and charging systems inspection, service, diagnosis and repair
- Introduction to computer-controlled and communication systems.
- Other technologies as required by the OEM's specifications

Effective Date/Updated: January 1, 2023