AUT 149 - Basic Automotive Electrical Diagnostics

Course Description

Effective: 2015-01-01

Introduces basic automotive electrical concepts, including theory and practical application. Provides instruction on using circuit wiring diagrams to accurately diagnose, troubleshoot, and repair simple electric circuits. Covers basic electrical principles, electrical terminology, and how to use electrical testing equipment. Provides preparation for the Automotive Service Excellence (ASE) A6 Electrical/Electronic Systems Certification examination. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week. 5 credits

General Course Purpose

This course introduces basic automotive electrical concepts, including theory and practical application. Provides instruction on using circuit wiring diagrams to accurately diagnose, troubleshoot, and repair simple electric circuits. Covers basic electrical principles, electrical terminology, and how to use electrical testing equipment. The course also provides preparation for the Automotive Service Excellence (ASE) A6 Electrical/Electronic Systems Certification examination.

Course Objectives

- define basic electrical principles.
- determine the proper flow of electricity using circuit wiring diagrams.
- demonstrate the ability to properly use electrical test equipment.
- perform on-vehicle testing of electrical components.
- evaluate electrical circuits using appropriate test equipment and service manuals.
- diagnose and repair electrical problems.

Major Topics to be Included

- Electrical Theory
• Service Information
• Wiring Diagrams
• Types of Circuits and Faults
• Proper Use of Tools and Equipment
• Electrical Troubleshooting Techniques
• Electrical Repair Techniques
• Battery Diagnosis and Service
• Charging Systems
• Starting Systems
• Lighting Systems