Course Prefix and Number: AUT 241  
Course Title: Automotive Electricity I

Course Description: Introduces electricity and magnetism, symbols and circuitry as applied to alternators, regulators, starters, lighting systems, instruments and gauges, and accessories. Part I of II. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

General Course Purpose: To examine the basic theory, operation, and repair of charging, starting, ignition, and accessory systems found on various automotive vehicles. Safety will be emphasized.

Course Prerequisites and Co-requisites: None

Student Learning Outcomes:  
Upon completing the course, the student will be able to  
a. Define various electrical terms;  
b. Identify and demonstrate the proper use of standard testing tools and equipment;  
c. Define how a storage battery works;  
d. Demonstrate the proper methods of removing, installing, testing, charging, and maintaining storage batteries;  
e. Demonstrate the proper test and repair procedures for starters and starter circuit;  
f. Demonstrate the proper test and repair procedures for alternators and charging circuits;  
g. Demonstrate the proper test and installation procedures for components for the ignition system; and  
h. Demonstrate the proper test and repair procedures for basic light wiring.

Major Topics to Be Included:  
a. Basics of Electricity  
b. Ohm’s Law  
c. Watt’s Law  
d. Components of an Electrical Circuit  
e. Circuit Protection Devices  
f. Meters and Measuring Devices  
g. Series, Parallel, and Series/Parallel Circuits  
h. Basic Troubleshooting Techniques and Tips  
i. Lighting Circuits  
j. Basics of Electronics and Computers  
k. Accessory Circuits and Basic Instrumentation  
l. Batteries and Testing  
m. Starting System Theory  
n. Charging System Theory  
o. Ignition System Theory

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