AUT 241
Automotive Electricity

COURSE OUTLINE

Prerequisites: none

Course Description:
Introduces electricity and magnetism, symbols, and circuitry as applied to the alternators, regulators, starters, lighting systems, instruments, and gauges and accessories.

Semester Credits: 4 **Lecture hours: 3 Lab hours: 3**

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Course Outcomes

At the completion of this course, the student should be able to:

- Explain Shop Safety
- Diagram, Explain, Automotive Electrical Systems
- Identify & Complete Repairs to Auto Electrical Components
- 70% of students completing AUT 241 will demonstrate how to identify and complete repairs to the automotive electrical system by receiving a score of 70% or higher on the ASE student certification in Electrical/Electronic Systems.

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Required Materials:

Safety goggles/glasses (with side shields)   Closed sturdy shoes

Textbook:

Automotive Technology principles, diagnosis and service – Pearson Publishers - Halderman 4th edition   ISBN 978-0-13-254261-6

CDX Plus Navigate (Light Vehicle). ISBN 978-1-44-966469-5

The following supplementary materials are available:

Publisher's online material

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Topical Description: (Outline chapters and sections to be covered in the book – may include timeline)

Chapter	Title
39	Electrical Fundamentals
40	Electrical Circuits and Ohm's Law
41	Series, Parallel Circuits
42	Circuit Testers and Digital Meters
43	Oscilloscopes and Graphing Meters
44	Automotive wiring and wire repair
45	Schematics and circuit testing
46	Capacitance and Capacitors
47	Magnetism
48	Electronic Fundamentals
49	CAN and Network Communications
50	Batteries
51	Battery Testing and Service
52	Cranking systems
53	Cranking System Diagnosis and Service
54	Charging Systems
55	Charging System Diagnosis and Service
56	Lighting & Signaling Devices

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Notes to Instructors
(List information about optional topics, departmental exams, etc)

1. Charging & Cranking systems are to illustrate diagnosis and repair of components contained within.

2. Practical exam is given on week 16

3. ASE online Testing