

**Virginia Western Community College**  
**AUT 241**  
**Automotive Electricity I**

**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. Part I of II.

**Semester Credits: 4 Lecture Hours: 3 Lab/Clinical/Internship Hours: 3**

**Required Materials****Textbook:**

Fundamentals of Automotive Technology, Principles, and Practice, 2nd Edition, ISBN: 978-1-284-10995-5

**Other Required Materials:**

- Safety Glasses
- Closed-toe shoes
- CDX Automotive Interactive CD
- Publisher's online material
- ASE Online Prep Tests

**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
- 71% of students completing AUT 241 will demonstrate how to identify and complete repairs to the automotive electrical system by receiving a score of 71% or higher on the ASE entry-level certification in Electrical/Electronic Systems, the final exam, or earn the Snap-On IC3 Multi-meter Certification

## **Topical Description**

<b><u>Chapter</u></b>	<b><u>Title</u></b>
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

## **Notes to Instructors**

- Charging & cranking systems are to illustrate diagnosis and repair of components contained within.
- Practical exam is given on week 16.
- ASE online Testing.