**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
* 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**

**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

**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.