

**NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
AUT 242 - AUTOMOTIVE ELECTRICITY II (4 CR.)**

Course Description

Introduces electricity and magnetism, symbols and circuitry as applied to the alternators, regulators, starters, lighting systems, instruments and gauges and accessories. Part II of II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

General Course Purpose

Automotive Electricity II focuses on automotive accessory systems. This course will emphasize the use of electrical wire diagrams to aid in the diagnosis and repair of electrical concerns in the accessory systems. In depth diagnosis and repair procedures are covered using DMM's, scan tools, and oscilloscopes. Attention is given to determining electrical systems defects, their probable causes, and what repairs are required for correction. Lecture demonstrations will cover theory and operation of accessory systems. Students will develop an understanding of various electrical accessory systems to include their function, operation, and service requirements. Laboratory experience will involve the use of diagnostic equipment for trouble shooting and correcting accessory systems concerns.

Course Prerequisites/Corequisites

Prerequisite: AUT 241. The ability to read, write, and speak the English language

Course Objectives

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

- Demonstrate a working knowledge of instrumentation
- Effectively diagnosis and repair power operated accessories to include; windshield wiper systems, power windows, power locks, cruise control and power seats
- Understand the theory and operation of warning, security, and audio systems
- Understand electrical circuits, read electrical wiring diagrams, and correctly use diagnostic tools
- Explain the possible system defects, troubleshooting procedures, diagnosis and repair procedures of computer controlled ignition systems
- Working knowledge of engine controls, possible defects, troubleshooting procedures, diagnosis and repair

Major Topics to be Included

- Electrical diagnosis and repair procedures
- Horns and buzzer warning systems
- Instrument panel gauges and indicator lights
- Power seats, power windows, power door locks
- Wiper and washer systems
- Security systems and communication systems
- Electrical and electronic basics review
- Electronic test equipment, including DMM's, scan tools and oscilloscopes
- Introduction of electronic ignition systems