

AUTO 136

Servicing Electrical and Electronic Systems II

5 Credits: 2 Lecture, 9 Lab hours

Community College of Baltimore County Common Course Outline

Description

AUTO 136–Repairing Automotive Electrical Systems II: introduces diagnosis and repair of automotive electrical systems and components; includes batteries, starting and charging for low and high voltage systems, electrical accessories, body and chassis electronics, electronic engine/motor controls, and advanced tools.

Pre-requisites: AUTO 131

Overall Course Objectives

Upon completion of this course, students will be able to:

1. trace wiring diagrams during diagnosis of complex electrical circuits;
2. obtain and interpret electrical diagnostic tool readings;
3. measure and diagnose the cause(s) of abnormal key-off battery drain and determine needed repairs;
4. perform battery state-of-charge test to determine needed service;
5. perform battery capacity (load, high-rate discharge) test and determine needed service;
6. inspect and clean battery cables, connectors, clamps, hold-downs, and repair or replace as needed;
7. perform starter current draw and circuit voltage drop test to determine needed repairs;
8. diagnose charging system problems that cause an undercharge, a no-charge, or an overcharge condition;
9. inspect and adjust alternator drive belts and replace as needed;
10. understand input, processing and output circuits;
11. introduce high voltage theory, operation and components;
12. inspect and diagnose DC to DC converters; and
13. perform all other up-to-date ASE Education Foundation tasks from the master course list.

Major Topics

- I. Charging system diagnosis
- II. Starter system diagnosis
- III. Lighting system diagnosis
- IV. High voltage system diagnosis
- V. Power accessories system diagnosis

Course Requirements

The Common Course Outline (CCO) determines the essential nature of each course.
For more information, see your professor's syllabus.

Grading will be determined by the individual faculty member, but shall include the following, at minimum:

- three quizzes
- weekly lab projects
- research paper (6-8 pages typed) or obtain the ASE Professional Certification
- three homework assignments
- active engagement in class activities
- one midterm exam
- one comprehensive final exam with a written component and a hands-on individual assessment

Written assignments and research projects: Students are required to use appropriate academic resources in their research and cite sources according to the style selected by their professor.

Other Course Information

This class combines lab with lecture and students apply knowledge learned in a hands-on environment.

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