

**Common Course Outline**  
**AUTO 241**  
**Repairing Automotive Engines – Related Systems**  
**5 Credits**

**The Community College of Baltimore County**

**Description**

**AUTO 241 – 5 Credits – Repairing Automotive Engines-Related Systems** introduces diagnosis and repair of engine performance-related component systems; laboratory experiences will include diagnosis, inspection, disassembly, overhaul, and repair of fuel emission, ignition, and engine-related systems as well as associated repairs. This course is taught during an 8-week session.

**5 credits:** 4 lecture hours; 9 laboratory hours per week

**Prerequisite:** AUTO 131, AUTO 136 and AUTO 161

**Overall Course Objectives**

Upon completion of this course students will be able to:

1. use wiring diagrams during diagnosis of electrical circuit problems;
2. measure available voltage and voltage drop in electrical/electronic circuits using a digital multimeter (DMM) to determine needed repairs;
3. measure current flow in electrical/electronic circuits and components using an ammeter to determine needed repairs;
4. find shorts, grounds, opens, and resistance problems in electrical/electronic circuits to determine needed repairs;
5. diagnose engine mechanical, electrical, electronic, fuel, and ignition problems with oscilloscope and engine diagnostic equipment to determine needed action;
6. inspect and test power and ground circuits and connections to determine service or replacement as needed; and
7. perform all other up to date (National Automotive Technicians Education Foundation) NATEF Tasks from the master course list.

**Major Topics**

- I. Operation of computer controlled engine systems
- II. Diagnosis of fuel injection systems
- III. Diagnosis of ignition systems
- IV. Diagnosis of emission systems

## **Course Requirements**

### Grading/Exams:

Grading procedures will be determined by the individual faculty member and will be provided on the first day of class. A student can expect a minimum of eight grades from the following categories:

1. Quizzes
2. Lab projects
3. Written paper
4. Homework assignments
5. Midterm exam
6. Class participation
7. Comprehensive final skills assessment (required)

### One Term Paper

1. Topic of the paper will be selected by the student and should relate to the subject material of the course.
2. The paper should be 6 to 8 pages in length, typewritten, and double-spaced. It should include in addition to the 6 to 8 pages of text, an author and title page and bibliography utilizing a minimum of three reference resources excluding classroom materials.
3. All papers are due when 80% of the class sessions are completed. Papers submitted late will be deducted one letter grade.

Written Assignments: Students are required to utilize appropriate academic recourses.

## **Other Course Information**

This course is an Automotive Technology core course. To complete the course successfully, practical ability as well as knowledge of theory must be demonstrated.