

Common Course Outline
EMET 205
Troubleshooting Mechanical Systems
3 Credits

The Community College of Baltimore County

Description

EMET 205 – 3 credits –Troubleshooting Mechanical Systems introduces students to troubleshooting techniques and proper maintenance procedures. This course covers electrical, mechanical and fluid power troubleshooting procedures. Understanding how electrical and mechanical systems work under ideal conditions and determining potential failures of the systems will be explored. The use of schematics, diagrams and test equipment will be used to solve problems and perform preventive maintenance on systems.

3 Credits: 2 lecture hours and 2 lab hours per week

Prerequisites: EMET 125, EMET 135 and ELEI 114

Overall Course Objectives

Upon completion of this course students will be able to:

1. locate components on a variety of schematic drawings;
2. discuss the operations of components of a fluid power system;
3. explain the importance of troubleshooting and preventive maintenance;
4. use a schematic to trace and isolate a failed component;
5. locate circuit breakers or fuses on a schematic;
6. check fluid levels on a hydraulic system;
7. measure voltage on an electrical system;
8. check pressure on a pneumatic system;
9. troubleshoot a pneumatic system;
10. troubleshoot a hydraulic control valve;
11. identify the symbols used to represent fluid power system components in a schematic diagram;
12. interpret composite symbols and explain their use in hydraulic and pneumatic systems;
13. follow troubleshooting and preventive maintenance flow charts and procedures for electrical and mechanical systems; and
14. complete paperwork used to track preventive maintenance and document issues resolved.

Major Topics

- I. Introduction to troubleshooting
- II. Troubleshooting tools
- III. Troubleshooting techniques
- IV. Troubleshooting electrical systems
- V. Troubleshooting fluid power systems
- VI. Solving mechanical problems
- VII. Determining system failures
- VIII. Communication and documentation of corrective and preventative maintenance

Course Requirements

Grading procedures will be determined by the individual faculty member but will include the following:

Grading/exams

- Written paper or suitable practical project
- Midterm exam
- Comprehensive final (including a practical exam)

In addition, students can expect additional grades from the following areas:

- Quizzes
- Lab Projects
- Homework Assignments

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

Other Course Information

This is a core course within the curriculum of the Mechanical Engineering Technology option of the Engineering Technology Program. This course is taught in classroom and laboratory environments.