

EMET 125

Mechanics and Maintenance Fundamentals

3 Credits: (2 hours lecture, 2 hours lab)

Community College of Baltimore County
Common Course Outline

Description

EMET 125 – Mechanics and Maintenance Fundamentals: equips students with essential competencies in mechanical systems and industrial measurement skills. Concepts of fluid mechanics and the construction of simple machines is reviewed. Students learn to use industrial precision measuring instruments to perform a variety of maintenance tasks. Industrial measurement concepts, including the identification and selection of materials, installation, and alignment of equipment is reviewed.

Overall Course Objectives

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

1. explain the principles and components involved in fluid mechanical systems;
2. describe the characteristics and operation of simple machines;
3. match measuring tools and instruments to various tasks;
4. identify commonly used fasteners;
5. describe the characteristics and impact of friction and wear;
6. operate standard power tools using safety procedures;
7. layout and drill a coupling;
8. apply varying degrees of pressure when tightening bolts with a torque wrench;
9. use test equipment to calculate measurements, work, and power used in industrial manufacturing;
10. apply the metric system to measurements of force, work, and power;
11. demonstrate proficiency in converting between metric and US standard instruments;
12. explain the concepts of linear measurements;
13. explain the concepts, scales, and tools used to measure temperature;
14. describe the instruments used to measure water and fluid flow; and
15. apply basic knowledge of measurement systems and instruments to calculate length, diameter, dimension, and depth.

Major Topics

- I. Simple machines, machine elements, and fasteners
- II. Measurement tools and instruments
- III. Friction and wear
- IV. Power tools
- V. Metric, linear, and surface measurements
- VI. Forces, temperature, and fluids

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:

- Five homework assignments
- Midterm exam
- One project
- Three labs
- Final exam

Date Revised: 12/7/2021

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For more information, see your professor's syllabus.