

Common Course Outline

EMET 105

Technical Blueprints and Schematics

3 Semester Hours

Community College of Baltimore County

Description

EMET 105 – 3 Credits - Technical Blueprint Reading and Schematics

introduces students to the basic graphic elements and symbols used in a variety of industrial drawings. Technical prints covered include machine drawings, sheet metal drawings, hydraulic and pneumatic drawings, piping and plumbing system drawings, and drawings representing electrical systems. Sketching concepts are presented to support student understanding of basic drawing principals. Students also learn to recognize standard features in schematics, and read and interpret symbols used in electrical, piping, hydraulic and pneumatic, and welding.

3 Credits; 3 lecture hours per week

Prerequisites: ACLT 052 or ACLT 053

Overall Course Objectives

Upon successful completion of this course the student will be able to:

1. describe the types and components of a variety of blueprint drawings;
2. explain the operations and components of simple machines;
3. sketch and matchmark assemblies;
4. select appropriate machine tools for specific activities;
5. interpret sheet metal drawings;
6. link symbols to the components they represent in hydraulic and pneumatic systems;

7. identify the components of piping and plumbing systems and the instruments used in conjunction with these systems;
8. describe a variety of sketch types and symbol systems used in schematics;
9. interpret the symbols shown on an electrical schematic, wiring diagrams, and industrial schematics;
10. describe the schematic representation of piping system components;
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. explain the process and purpose of fusion welding; and
14. interpret welding symbols on a schematic.

Major Topics

- I. Introduction to Blueprints
- II. Machine Parts and Drawings
- III. Hydraulic and Pneumatic Drawings and Piping and Plumbing Systems
- IV. Electrical Drawings
- V. Introduction to Sketching, Schematics and Symbols
- VI. Electrical Symbols and Diagrams
- VII. Piping, Hydraulic and Pneumatic Symbols and Diagrams
- VIII. Welding and Joint Symbols

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member and will be provided on the first day of class.

The following will be required for this course:

1. Written paper or suitable practical project
2. Midterm exam
3. Comprehensive final (including a practical exam).

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

4. Quizzes
5. Homework Assignments.

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 a classroom environment.

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