

Common Course Outline

CAMM 161

Milling Machine Operation

3 Credits

Community College of Baltimore County

Description

CAMM 161 – Milling Machine Operation provides instruction and practice in the theory and operation of vertical milling machines, which includes set-up, operation, adjustment, truing of the head, and routine maintenance.

3 Credits

Prerequisites: CAMM 111 with a passing grade of “C” or higher or NIMS “Measurement, Material and Safety” certification.

Overall Course Objectives

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

1. operate the vertical milling machine safely;
2. set-up and operate vertical milling machines;
3. create slots in various materials;
4. bore a hole in given material;
5. use basic Geometric Dimensioning and Tolerancing;
6. construct simple and complex set-ups for projects;
7. plan the process that is the most efficient and will achieve the required finish;
8. calculate feeds and speeds for various work materials and cutting tools;
9. create precision milled parts to specifications;
10. evaluate finished lab projects as per specifications and list deficiencies;
11. inspect projects using precision measuring equipment and list deficiencies; and
12. prepare for the National Institute of Metalworking Skills (NIMS) Level 1 “Milling” certification.

Major Topics

- I. The Vertical Milling Machine
 - A. Safety
 - B. Head alignment
 - C. Work holding
 - D. Part alignment
- II. Processes
 - A. Pocketing
 - B. Speeds and feeds
 - C. Cutting tools

- D. Milling slots
- E. Using the boring head

Course Requirements

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

Grading/exams

- Minimum of 1 milling project
- Minimum of 2 quizzes
- Minimum of 10 homework assignments
- 1 Midterm
- 1 Final exam

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

Other Course Information

This course uses ToolingU as the online resource.

This course is taught in a laboratory environment.