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.

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