

Common Course Outline
CAMM 111
MACHINE TOOL PROCESSES 1
4 Semester Hours

The Community College of Baltimore County

Description

Machine Tool Process 1

Provides instruction and practice in the theory and operation of engine lathes, vertical milling machines, surface grinders, selected other machine tools, as well as the function and use of basic precision measuring tools; includes basic processes and procedures of metal machining.

Prerequisite: NONE

Overall Course Objectives

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

1. Identify major machine tools
2. Describe the capabilities and functions of machine tools
3. Identify and select edge tools appropriate to their function and use
4. Calculate feeds and speeds for edge tools
5. Create machined parts to print specifications
6. Demonstrate accurate use of basic measuring devices
7. Set-up and operate engine lathes, vertical milling machines, and surface grinders
8. Evaluate finished lab projects as per specifications and list deficiencies

Major Topics

- I. Precision Measuring Tools
 - A. The machinist scale
 - B. The micrometer
 - C. The vernier caliper
 - D. The vernier height gage

- II. The Engine Lathe
 - A. Safety
 - B. The 4 jaw chuck
 - C. The 3 jaw chuck
 - D. Collet chucks
 - E. Cutting tools

- F. Speeds and feeds
 - G. Lathe centers
 - H. Basic operations
- III. The Vertical Mill
- A. Safety
 - B. Head alignment
 - C. Work holding
 - D. Work alignment
 - E. Speeds and feeds
 - F. Cutting tools
 - G. Edge finding
 - H. Basic operation
- IV. The Surface Grinder
- A. Safety
 - B. Wheel selection
 - C. Dressing and truing
 - D. Basic grinding operation

Course Requirements

Grading: The faculty member will determine grading procedures, and a student can expect a minimum of eight grades from at least four of the following categories:

1. Quizzes
2. Lab projects
3. Written paper
4. Homework assignments
5. Midterm exam
6. Class participation
7. Comprehensive final.

Other Course Information

This course is taught in a laboratory environment.

Date Revised: 6/1/00