

Common Course Outline

CAMM 201

CNC Programming

3 Credits

Community College of Baltimore County

Description

CAMM 201 – CNC Programming discusses basic computer operations and commands necessary to use Computer Aided Manufacturing (CAM) software for programming, editing, storing, and retrieving programs for Computerized Numerical Control (CNC) machines. This course covers 2-axes mill, basic lathe programming, and basic machine shop practices used when creating and manipulating CNC programs.

3 Credits

Prerequisites: CAMM 111 with a passing grade of “C” or higher or NIMS “Measurement, Material and Safety” certification and CAMM 101 with a passing grade of “C” or higher.

Overall Course Objectives

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

1. describe and use basic windows commands;
2. use the CAM software package to edit programs;
3. import and export CAD files;
4. create new tooling to be used in CAM software;
5. assign tool path to part graphics;
6. create 2-D geometry using CAM software;
7. create tool paths from sketches, CAD files, and drawings;
8. create a CNC program by using CAM software;
9. edit post processor; and
10. save programs to be transferred to CNC equipment.

Major Topics

- I. Introduction to Operating System
 - A. Version of windows
 - B. Editors for CNC
 - C. Location and file storage
 - D. File extensions
- II. CAM Systems
 - A. Manual and CAM generated codes
 - B. Local and work coordinates
 - C. Contour and pocketing routines

- D. Hole operations and optimization
- III. Creating Tool-Paths and Working with Assorted CNC Machines
 - A. Using the CAM system with various CNC machines
 - B. Using libraries of parts
 - C. Vertical and horizontal programming practices
- IV. Post Editing
 - A. Using the post processor
 - B. Editing the post
 - C. Adding operation and function
 - D. Debugging posts and resulting G and M code

Course Requirements

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

Grading/exams

- Minimum of 6 classwork assignments
- Minimum of 2 quizzes
- Minimum of 10 homework assignments
- Class participation
- 1 Midterm
- 1 Final exam

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

Other Course Information

This course is taught in a computerized environment.