Degree Applicable

Glendale Community College
March 2013

COURSE OUTLINE

COMPUTER AIDED MANUFACTURING 231
Intermediate Milling Laboratory

I. Catalog Statement

Computer Aided Manufacturing 231 is a laboratory class for students to practice on the MasterCam program and complete assignments from Computerized Numerical Control 211. This class provides additional time on computers to expand knowledge of and proficiency in the use of Computer Aided Manufacturing programs.

Total Lecture Units: 0.0
Total Laboratory Units: 1.0
Total Course Units: 1.0

Total Lecture Hours: 0.0
Total Laboratory Hours: 48.0
Total Faculty Contact Hours: 48

Prerequisite: Computer Aided Manufacturing 211 or equivalent (CAM 211 may be taken concurrently).

II. Course Entry Expectations

Skills Level Ranges: Reading 5; Writing 5; Listening /Speaking 5; Math 5.

III. Course Exit Standards

Upon successful completion of required coursework the student will be able to:
1. complete simple exercise programs;
2. create a simple project on the Numerical Controlled milling machine, including designing the part, the program and the setup of the machine;
3. analyze the process of milling a part from design stage to production;
4. record and evaluate time spent on course projects.

IV. Course Content — Total Faculty Contact Hours = 48

A. General Introduction — 3 hours
   1. Scope of curriculum
   2. Course requirements
   3. Grading standards

4. Methods of work preparation

B. Computer Operation 12 hours
1. Preparation of NC program
   a. Modification for different controls
   b. Changing postprocessors
   c. Postprocessing

C. Machine Operation 33 hours
1. Program downloading
   a. Dripfeed
   b. Direct Numerical Control (DNC)
2. Proofing run of program
3. Changes at machine control
4. Uploading from control to computer
5. Machine setup
6. Machining of part
7. Inspection of finished part

V. Methods of Instruction

The following methods of instructions may be used in the course:
1. classroom lecture and discussion;
2. demonstrations;
3. films;
4. peer learning;
5. guest speakers.

VI. Out of Class Assignments

The following out of class assignments may be used in the course:
1. weekly assignments;
2. notebook check;
3. written homework assignments.

VII. Methods of Evaluation

The following methods of evaluation may be used in the course:
1. evaluation of laboratory work;
2. midterm and final examinations.

VIII. Textbooks

MasterCam Applications Manual. Version 5.5, CNC Concepts, 1995.
10th Grade Reading Level

MasterCam Milling Handbook. Version 5.5, CNC Concepts, 1995.
10th Grade Reading Level

IX. Student Learning Outcomes:

1. Student will be able to complete simple exercise programs.
2. Student will be able to create a simple project on the Numerical Controlled milling machine, including designing the part, the program and the setup of the machine.
3. Student will be able to analyze the process of milling a part from design stage to production.