JEFFERSON COLLEGE
COURSE SYLLABUS

CIM125
CNC PROGRAMMING I

3 Credit Hours

Revised by
Michael D. McKinney
August 16, 2012

Mary Beth Ottinger, Ph.D., Division Chair, Business & Technical Education
Dena McCaffrey, Ed.D., Interim Dean, Career & Technical Education
CIM125 CNC Programming I

I. CATALOGUE DESCRIPTION

A. Pre/co-requisite: CIM105 Introduction to Machining Procedures and Reading Proficiency

B. 3 Credit Hours

C. In this course the students will learn beginning levels of G & M (EIA) code programming along with basic Computer Numerical Control (CNC) theory. Students will learn tooling options, cutting conditions, and program the Machine Tool to produce a finished part. (F)

II. EXPECTED LEARNING OUTCOMES / ASSESSMENT MEASURE

| Students will use vocabulary peculiar to the trade | In-class discussion |
| Students will write beginning programs using EIA format | Part program printouts |
| Students will calculate positioning using the Cartesian coordinate system | Handouts, class exercises, quizzes and final exam |
| Students will identify basic types of cutting tools | Handouts, class exercises, quizzes and final exam |
| Students will identify G-codes and their uses | Program printouts, lab exercises and final exam |
| Students will identify M-codes and their uses | Program printouts, lab exercises and final exam |
| Students will write a part program for Machining Center | Program printouts, blue print, lab exercises and final exams |
| Students will create a part on CNC Machining Centers and Turning Centers | Lab exercises |
III. OUTLINE OF TOPICS

A. Uses of CNC Machines
   1. Machining Center
   2. Turning Center
   3. Wire EDM
   4. Water Jet
   5. Laser Jet

B. Cutting Tools
   1. Drills
   2. End Mills
   3. Carbide End Mills
   4. Taps
   5. Reamers
   6. High Speed Cutters

C. Beginning programs
   1. G01
   2. G02
   3. G03
   4. G00
   5. M00
   6. M02
   7. M03
   8. M05
   9. M08
  10. M09

D. Cartesian Coordinate System
   1. Absolute Positioning
   2. Incremental Positioning

IV. METHOD(S) OF INSTRUCTION

A. Lecture

B. Discussion

C. Lab
V. REQUIRED TEXTBOOK(S)


VI. REQUIRED MATERIALS

A. Textbooks
B. Pencil
C. Calculator
D. Safety glasses
E. Flash Drive
F. Composition Notebook
G. Spiral Notebook

VII. SUPPLEMENTAL REFERENCES

Machine Manuals are located at the machine tools in the lab.

VIII. METHOD OF EVALUATION

A. Attendance 15%
B. Homework 15%
C. Lab Assignments 30% (parts, program printouts, etc.)
D. Final Examination 20%
E. Quizzes 20%

IX. ADA AA STATEMENT

Any student requiring special accommodations should inform the instructor and the Coordinator of Disability Support Services (Library phone 636-481-3169).

X. ACADEMIC HONESTY STATEMENT

All students are responsible for complying with campus policies as stated in the Student Handbook (see College website, http://www.jeffco.edu).
XI. ATTENDANCE STATEMENT

Regular and punctual attendance is expected of all students. Any one of these four options may result in the student being removed from the class and an administrative withdrawal being processed: (1) Student fails to begin class; (2) Student ceases participation for at least two consecutive weeks; (3) Student misses 15 percent or more of the coursework; and/or (4) Student misses 15 percent or more of the course as defined by the instructor. Students earn their financial aid by regularly attending and actively participating in their coursework. If a student does not actively participate, he/she may have to return financial aid funds. Consult the College Catalog or a Student Financial Services representative for more details.

XII. OUTSIDE OF CLASS ACADEMICALLY RELATED ACTIVITIES

The U.S. Department of Education mandates that students be made aware of expectations regarding coursework to be completed outside the classroom. Students are expected to spend substantial time outside of class meetings engaging in academically related activities such as reading, studying, and completing assignments. Specifically, time spent on academically related activities outside of class combined with time spent in class meetings is expected to be a minimum of 37.5 hours over the duration of the term for each credit hour.