JEFFERSON COLLEGE

COURSE SYLLABUS

CIM240

COMPUTER AIDED MANUFACTURING

5 Credit Hours

Revised by
Michael D. McKinney
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CIM240 Computer Aided Manufacturing

I. CATALOGUE DESCRIPTION

A. Pre-requisite: CIM225 Advanced CNC Programming and Reading Proficiency
   Co-requisite: CIM235 Computer Integrated Manufacturing

B. 5 Credit Hours

C. In this course the students will learn different types of programming processes using the aid of SurfCAM software combined with CAD drawing produced in AutoCad. Students will perform tooling selection, part setups, and program the machine tool to produce a finished part. (S)

II. EXPECTED LEARNING OUTCOMES / ASSESSMENT MEASURE

<table>
<thead>
<tr>
<th>Students will use vocabulary peculiar to the trade</th>
<th>In-class quizzes and in-class discussions</th>
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<tr>
<td>Students will create part drawings using CAD software</td>
<td>In-class exercises and part prints, instructor observation, and final exam</td>
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<tr>
<td>Students will create tool paths using CAM software</td>
<td>Computer simulation modes, instructor observation, and final exam</td>
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<tr>
<td>Students will select proper tooling for surface machining</td>
<td>Computer simulation modes, critique of products, instructor observation, and final exam</td>
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<tr>
<td>Students will determine correct geometry for machining</td>
<td>Computer simulation modes, critique of product, and final exam</td>
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<tr>
<td>Students will select proper tooling for part turning on a CNC lathe and CNC mill</td>
<td>Program printout, critique of products, dimension measurements, and final exam</td>
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III. OUTLINE OF TOPICS

A. CAD/2D Module
   1. Part Origin
   2. Drawing Origin
   3. C Views
   4. Tools
   5. Drawing Set-Up
   6. Splines
   7. Wire Frame
   8. DWG Files
   9. DXF Files
   10. Solid Modeling
B. CAM/2D Module
   1. Geometry Selection
   2. Tooling Selection
   3. Order of sequence
   4. Material selection
   5. Surfaces
   6. Blend
   7. Verification
   8. File Transfer
   9. Dry Run

IV. METHOD(S) OF INSTRUCTION

   A. Lecture
   B. Discussion
   C. Lab

V. REQUIRED TEXTBOOK(S)

   Mattson, Mike, *CNC Programming Principles and Applications*, (Current Edition), Cengage

VI. REQUIRED MATERIALS

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

VI. SUPPLEMENTAL REFERENCES

   Machine Manuals are located at the machine tools in the lab
VIII. METHOD OF EVALUATION

A. Attendance 10%
B. Lab Assignments 55%
C. Final Examination 15%
D. Tests 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.