Clackamas Community College

Online Course/Outline Submission System

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MFG-204 Computer-Aided Manufacturing I

General education certified: ⚪ Yes 🔘 **No**

☐ Writing
☐ Oral Communication
☐ Arts and Letters
☐ Science & Computer Science
☐ Mathematics
☐ Social Science
☐ Cultural Literacy
☐ Health & Physical Education

☐ Approved Date (mm/dd/yyyy): [   ] / [   ] / [   ]   [Submit]

Section #1 General Course Information

Department: Manufacturing

Submitter

First Name: Bob
Last Name: Delgatto
Phone: 3320
Email: delgatto

Course Prefix and Number: MFG - 204

 # Credits: 4

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 88
Lab (# of hours):
Total course hours: 88

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

Course Title: Computer-Aided Manufacturing I

Course Description:

This course is an introduction to computer-aided part creation, and programming. Students will use CAD/CAM software to generate NC code to produce machined products. Model creation, process verification, code generation, and CAD/CAM integration will be covered.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

Does this course map to any general education outcome(s)?

No

Is this course part of an AAS or related certificate of completion?

Yes

Name of degree(s) and/or certificate(s): Manufacturing Programs

Are there prerequisites to this course?

No

Are there corequisites to this course?

No

Are there any requirements or recommendations for students taken this course?

Yes

Recommendations: Completion of MFG-201 & MFG-112

Requirements: None

Are there similar courses existing in other programs or disciplines at CCC?

No

Will this class use library resources?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit:Yes

When do you plan to offer this course?

✓ **Fall**

Is this course equivalent to another?

If yes, they must have the same description and outcomes.

No

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

Upon successful completion of this course, students should be able to:

1. demonstrate an understanding of basic CAD practices,
2. create wire frame geometry,
3. import geometry into the CAM system,
4. identify toolpath operation types,
5. create CAM generated tool paths,
6. utilize the "Verify" and "Backplot" utility to trouble shoot toolpaths, within the CAM program;
7. post process the toolpath to NC code,
8. apply this to previously acquired CNC skills to produce a machined part.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Basic CAD drawing.
2. Geometry modifications and transformations.

3. Basic Toolpath creation.
4. Cutter Compensation through CAM.
5. Data entry shortcuts.
6. Toolpath Verification.
7. Toolpath Backplot.
8. Importing CAD files.
9. Use of the Operations Manager.
10. Utilizing Job Set-up.
11. Post processing.
12. File transmission.

Does the content of this class relate to job skills in any of the following areas:

1. Increased energy efficiency	**No**
2. Produce renewable energy	**No**
3. Prevent environmental degradation	**No**
4. Clean up natural environment	**No**
5. Supports green services	**No**

Percent of course:0%

First term to be offered:

Next available term after approval
: