Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Manufacturing

Submitter

First Name: Wes
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Course Prefix and Number: MFG - 202

 # 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: CNC II: Programming & Operation

Course Description:

This course emphasizes the writing of G&M machine codes. Students will learn advanced programming and operations of CNC milling centers and basic programming, set-up, and operation of CNC turning centers.

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 Technology AAS, Computer-Aided Manufacturing AAS

Are there prerequisites to this course?

Yes

Pre-reqs: MFG 201

Have you consulted with the appropriate chair if the pre-req is in another program?

No

Are there corequisites to this course?

No

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

No

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

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

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?

✓ Summer

✓ Winter

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. describe how efficiencies are gained through the use of CNC technology to provide increased productivity and reduced product cost,
2. use trigonometry to solve programming problems,
3. identify and use control codes specific to FANUC and OKUMA control systems,
4. write G&M code programs from scratch,
5. interpret a Numerical Control (NC) program and determine what machining operations are taking place,
6. transfer programs to and from a CNC machine tool using communication software,
7. install work-holding hardware and set-up machine work-zeros,
8. install tooling into CNC milling and turning machines,
9. touch off tools and set-up tool offsets on CNC milling and turning machines,
10. perform first runs on the CNC programs for the purpose of prove out.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. CNC mill
a. Sub-programming
b. 4TH axis programming
c. Set-up
d. Operation
2. CNC lathe
a. Programming
b. Set-up
c. Operation

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
: