

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Manufacturing

Submitter

First Name: **Wes**

Last Name: **Locke**

Phone: **3321**

Email: **wesl**

Course Prefix and Number: MFG - 203

Credits: 3

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 66

Lab (# of hours):

Total course hours: 66

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 III: Applied Programming & Operation

Course Description:

Students work individually or in small groups to design, program, manufacture, and test advanced projects using: CNC mills, CNC lathes, Electrical Discharge Machines (EDM) and various software applications.

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 202

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?

✓ **Fall**

✓ **Spring**

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. explain the basics of the Electrical Discharge Machines (EDM) process,
2. write a simple CNC EDM program,
3. state the specific advantages of an EDM sinking machine,
4. set-up and produce parts on the EDM machine,
5. set the machining process parameters including the power and flushing setting to obtain the desired workpiece characteristics and economy,
6. describe manufacturing processes that rely on EDM,
7. work in a team environment to produce project parts.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Introduction to Electrical Discharge Machines (EDMs).
2. EDM safety.
3. EDM machine operation.
4. EDM fundamentals.
5. EDM programming.
6. Electrode materials and design.
7. Related manufacturing processes.
8. Technical report writing application (included with labs and projects).

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

:
