

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: Welding

Submitter

First Name: **John**

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Email: **johnp**

Course Prefix and Number: WLD - 230

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 Press Brake

Course Description:

This is a hands-on class where students will learn how to safely set-up and operate a Computerized Numerically Controlled (CNC) Press Brake. Subjects include: basic calculations related to metal forming, tooling fundamentals, flat pattern development concepts, and CNC forming techniques.

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): Welding AAS

Are there prerequisites to this course?

Yes

Pre-reqs: Pass MTH-050 and WLD-100

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?

✓ **Not every term**

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. summarize how CNC machine tools have benefited industry by increasing productivity and reducing product cost,
2. summarize how the control, motion, feedback systems work together on CNC department;
3. demonstrate a high level of Press Brake safety awareness,
4. apply basic math and sketching techniques to develop flat patterns,
5. perform calculations relating to tooling and machine ram pressure,
6. perform safe start-up and shut-down of the CNC Press Brake,
7. program the CNC control to perform multiple bends,
8. install tooling for both single and multi-bend projects strategically,
9. perform accurate measurements for the purpose of adjusting CNC settings.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Machine safety.
2. Machine nomenclature and CNC control.
3. Machine start-up and shut down.
4. Tonnage and toolage calculations.
5. Bend types (air, bottoming, & coining).
6. Flat pattern development fundamentals.
7. Tooling usage and set-up.
8. Flat pattern layout exercises.
9. Forming projects (multi-bend).
10. CNC control programming.

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

:
