



Course Outline

2026-2027 Catalog

WLD 25 - Fabrication Practicums

Catalog Description

Transfer Status: CSU

Prerequisite: WLD 21 and NCCER Level I Welding Qualification

Unit(s): 2.00

Lecture: 17.00 Contact hours/34.00 Out of class hours/51.00 Total hours/1.00 Unit(s)

Lab: 51.00 Contact hours/0.00 Out of class hours/51.00 Total hours/1.00 Unit(s)

Total: 68.00 Contact hours/34.00 Out of class hours/102.00 Total hours/2.00 Unit(s)

Course Description: This course will instruct students on theory, proper operation, and applications of manual and CNC equipment, tools, fasteners, and processes used in welding and fabrication industries. Emphasis is placed on hands-on applications.

Objectives

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

1. Demonstrate proper set up and use of equipment and tools used in fabrication.
2. Identify tools, fasteners, and materials used in fabrication.
3. Operate fabrication equipment in a safe manner.
4. Fabricate small projects with accuracy.

Course Content

Topic Titles / Suggested Time Topic

Lecture

<u>Topics</u>	<u>Lec Hrs</u>
Introduction and safety	2.00
Hand tools used for fabrication and tool identification	1.00
Calculation methods and equipment used	1.00
Power and hand-operated tool adjustments and setups	2.00
Material identification	1.00
Metal working - hot and cold	2.00
Templates	1.00
Jigs/fixtures	1.00
Assembly procedures	1.00
Repairing assessment methods and processes	1.00
Sheet metal working	1.00
Bending various structural shapes	2.00
Methods of fastening and fastener identification	1.00
Total Hours:	17.00

Lab

<u>Topics</u>	<u>Lab Hrs</u>
Hand tools used for fabrication and tool identification	4.00
Calculation methods and equipment used	3.00
Power and hand-operated tool adjustments and setups	10.00
Material identification	4.00
Metal working - hot and cold	3.00
Templates	2.50
Jigs/fixtures	2.50
Assembly procedures	4.00
Repairing assessment methods and processes	2.00
Sheet metal working	5.00
Bending/rolling various structural shapes	5.00
Methods of fastening and fastener identification	4.00

<u>Topics</u>	<u>Lab Hrs</u>
Introduction and safety	2.00
Total Hours: 51.00	

Methods of Instruction

- A. Discussion
- B. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- C. Instructor Demonstrations
- D. Laboratory Experiments
- E. Lecture

Methods of Evaluation

- A. Exams/Tests
- B. Homework
- C. Lab Projects
- D. Lab Final/Mid-term Project

Examples of Assignments

Reading Assignments

1. Read assigned AWS journal article and be prepared to discuss in class.
2. Read chapter 8 and be prepared to discuss in class.

Writing Assignments

1. Write a 500-word essay explaining how the above AWS article can be implemented into the process and how it relates to the class.
2. Describe the order of operations for press brake setup.

Out-of-Class Assignments

1. Answer review questions for chapter 7.
2. Research the proper setup procedure for the shear using manufactures publication.

Recommended Materials of Instruction

O'Con, R., & Carr, R. (2015). Metal Fabrication a Practical Guide. *Fabricators and Manufactures Association International*, 4th. 978-1-881113133.

National Center for Construction and Research (NCCER). (2023). Welding Level One. *Pearson*, 6th. 9780137924530.

National Center for Construction and Research (NCCER). (2025). Welding Level Two. *Pearson*, 6th. 9780138216160.

Other Learning Materials

All tools listed in the Full-Time Welding Program Semester 1 tool list on the Butte College Welding Technology website.

Minimum Qualifications

Welding

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