BUTTE COLLEGE
COURSE OUTLINE

I. **CATALOG DESCRIPTION**

WLD 25 - Fabrication Practicums **2 Unit(s)**

Prerequisite(s): WLD 21 and NCCER Level I Welding Qualification
Co-requisite(s): WLD 22, WLD 24, WLD 26, WLD 40, WLD 154
Recommended Prep: Reading Level III; English Level II; Math Level II
Transfer Status: CSU
17 hours Lecture
51 hours Lab

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

II. **OBJECTIVES**

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

A. Set up, use and work with the equipment and tools used in fabrication.
B. Identify tools, fasteners, and materials used in fabrication.
C. Operate fabrication equipment in a safe manner.
D. Fabricate small projects with accuracy.

III. **COURSE CONTENT**

A. **Unit Titles/Suggested Time Schedule**

Lecture

Topics	Hours
1. Introduction and safety	2.00
2. Hand tools used for fabrication and tool identification	1.00
3. Calculation methods and equipment used	1.00
4. Power and hand operated Tool adjustments and setups	2.00
5. Material identification	1.00
6. Metal working -- hot and cold	2.00
7. Templates	1.00
8. Jigs/Fixtures	1.00
9. Assembly procedures	1.00
10. Repairing assessment methods and processes	1.00
11. Sheet metal working	1.00
12. Bending various structural shapes	2.00
13. Methods of fastening and fastener identification	1.00
Total Hours	17.00

Lab

Topics	Hours
1. Introduction and safety	2.00
2. Hand tools used for fabrication and tool identification	4.00

3.	Calculation methods and equipment used	3.00
4.	Power and hand operated Tool adjustments and setups	10.00
5.	Material identification	4.00
6.	Metal working -- hot and cold	3.00
7.	Templates	2.50
8.	Jigs/Fixtures	2.50
9.	Assembly procedures	4.00
10.	Repairing assessment methods and processes	2.00
11.	Sheet metal working	5.00
12.	Bending/Rolling various structural shapes	5.00
13.	Methods of fastening and fastener identification	4.00
Total Hours		51.00

IV. METHODS OF INSTRUCTION

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

V. METHODS OF EVALUATION

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

VI. EXAMPLES OF ASSIGNMENTS

A. 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.
B. Writing Assignments
    1. Write an 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.
C. Out-of-Class Assignments
    1. Answer review questions for chapter 7.
    2. Research the proper setup procedure for the shear using manufactures publication.

VII. RECOMMENDED MATERIALS OF INSTRUCTION

Textbooks:

A. Robert L. O'Con and Richard H. Carr. Metal Fabrication a Practical Guide. 3rd Edition. Fabricators and Manufactures Association International, 2010.
B. Frank Marlow. Welding Fabrication and Repair. Industrial Press, 2002.

C. Thomas Wright. Manufacturing Systems. The Goodheart-Wilcox Company Inc., 1990.
D. National Center for Construction and Research (NCCER). Welding Level One. 4th Edition. Pearson Education INC, 2010.
E. National Center for Construction and Research (NCCER). Welding Level Two. 4th Edition. Pearson Education INC, 2010.

Materials Other Than Textbooks:
A. All tools listed in the Butte College Welding Technology Program Guide.

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