BUTTE COLLEGE
COURSE OUTLINE

I. **CATALOG DESCRIPTION**

WLD 26 - Symbol Reading, Blue Print Interpretation and Computations **3 Unit(s)**

Prerequisite(s): WLD 21 and NCCER Level I Welding Qualification
Co-requisite(s): WLD 22, WLD 24, WLD 25, WLD 40, WLD 154
Recommended Prep: Reading Level III; English Level II; Math Level II

Transfer Status: CSU
17 hours Lecture
102 hours Lab

This course includes an introduction to blueprint reading and welding symbols interpretation as applied to measurement and computations of metal and pipe layouts. Included within the course are layout and marking tool techniques used in the welding industry. Techniques of fabrication, structured materials listing and assembly methods will be emphasized.

II. **OBJECTIVES**

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

A. Develop basic skills of blueprint interpretation.
B. Develop competence of the tools and equipment used for layout, fabrication and construction of welded structures.
C. Demonstrate the safe and proper use of tools, methods of construction, fabrication, layout patterns and computations needed for the completion of metal and pipe structures.
D. Interpret welding symbols on a variety of layouts and working drawings.

III. **COURSE CONTENT**

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

Lecture

Topics		Hours
1.	Introduction and safety	2.00
2.	Basic lines and views	1.00
3.	Sketching	1.00
4.	Dimensions, notes and specifications	1.00
5.	Structural shapes and sections	1.00
6.	Transcribing measurements	1.00
7.	Detail and assembly of prints	1.00
8.	Welding symbols and abbreviations	2.00
9.	Basic joints and weldments fabrications	1.00
10.	Pipe welding symbols	1.00
11.	Techniques used in layout	1.00
12.	Welder computations	1.00
13.	Material listings	1.00
14.	Fabrication procedures and equipment	1.00
15.	Production techniques and equipment	1.00
Total Hours		17.00

Lab

Topics		Hours
1.	Introduction and safety	2.00
2.	Basic lines and views	4.00
3.	Sketching	6.00
4.	Dimensions, notes and specifications	4.00
5.	Structural shapes and sections	6.00
6.	Transcribing measurements	6.00
7.	Detail and assembly of prints	6.00
8.	Welding symbols and abbreviations	16.00
9.	Basic joints and weldments fabrications	12.00
10.	Pipe welding symbols	6.00
11.	Techniques used in layout	6.00
12.	Welder computations	12.00
13.	Material listings	6.00
14.	Fabrication procedures and equipment	6.00
15.	Production techniques and equipment	4.00
Total Hours		102.00

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 unit 1 and be prepared to discuss in class.
B. Writing Assignments
    1. Write an essay explaining how the assigned AWS article can be implemented into the process and how it relates to the class.
    2. Describe in writing an order of operations for the assembly of a trailer project.
C. Out-of-Class Assignments

1. Create a bill of materials, cut sheet, drawing, and assembly instructions for a assigned project.
2. Answer review questions for unit 10.

VII. **RECOMMENDED MATERIALS OF INSTRUCTION**

Textbooks:

A. A.E. Bennett and Louis J. Sig. Blueprint Reading for Welders. 8th Edition. Thomson, Delmar Learning, 2005.
B. The Goodheart-Wilcox Company, Inc.. Math for Welders. The Goodheart-Wilcox Company, Inc., 2006.
C. National Center for Construction Education and Research (NCCER) . Welding Level Two. 4th Edition. Pearson Education INC, 2010.
D. National Center for Construction Education and Research (NCCER). Welding Level One. 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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