Course Outline

2026-2027 Catalog

WLD 26 - Symbol Reading, Blue Print Interpretation and Computations

Catalog Description

Transfer Status: CSU

Prerequisite: WLD 21 and NCCER Level I Welding Qualification

Unit(s): 3.00

Lecture: 17.00 Contact hours/34.00 Out of class hours/51.00 Total hours/1.00 Unit(s)
Lab: 102.00 Contact hours/0.00 Out of class hours/102.00 Total hours/2.00 Unit(s)
Total: 119.00 Contact hours/34.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

Course Description: 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.

Objectives

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

1. Interpret blueprints to identify dimensions and fabrication requirements.
2. Differentiate the tools and equipment used for layout, fabrication and construction of welded structures.
3. 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.
4. Interpret welding symbols on a variety of layouts and working drawings.

Course Content

Topic Titles / Suggested Time Topic

Lecture

Topics	Lec Hrs
Introduction and safety	2.00
Basic lines and views	1.00
Sketching	1.00
Dimensions, notes and specifications	1.00
Structural shapes and sections	1.00
Transcribing measurements	1.00
Detail and assembly of prints	1.00
Welding symbols and abbreviations	2.00
Basic joints and weldments fabrications	1.00
Pipe welding symbols	1.00
Techniques used in layout	1.00
Welder computations	1.00
Material listings	1.00
Fabrication procedures and equipment	1.00
Production techniques and equipment	1.00
Total Hours:	**17.00**

Lab

Topics	Lab Hrs
Introduction and safety	2.00
Basic lines and views	4.00
Sketching	6.00
Dimensions, notes and specifications	4.00
Structural shapes and sections	6.00
Transcribing measurements	6.00
Detail and assembly of prints	6.00
Welding symbols and abbreviations	16.00
Basic joints and weldments fabrications	12.00
Pipe welding symbols	6.00

Topics	Lab Hrs
Techniques used in layout	6.00
Welder computations	12.00
Material listings	6.00
Fabrication procedures and equipment	6.00
Production techniques and equipment	4.00
Total Hours:	**102.00**

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

Writing Assignments

1. Write a 500-word 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.

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.

Recommended Materials of Instruction

Bennett, A., & Sig, L. (2015). Blueprint Reading for Welders. *Cengage, 9th.* 9781305098268.
Marion. (2023). Math for Welders. *Goodheart-Wilcox Company, Inc., 7th.* 9781685845735.
National Center for Construction Education and Research (NCCER). (2025). Welding Level Two. *Pearson, 6th.* 9780134163109.
National Center for Construction Education and Research (NCCER). (2023). Welding Level One. *Pearson, 6th.* 9780137924530.

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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