

University of Arkansas - Fort Smith
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General Syllabus

WELD 14744 Layout and Fabrication-Structural Pipe

Credit Hours: 4

Lecture Hours: 2

Laboratory Hours: 4

Prerequisite or corequisite: WELD 12344 Introduction to Welding and Print Reading

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Study of the theory and practice of layout and fitting pipe and structural steel. The student will learn the process of fabricating structural joints from pipe and steel through a series of competency-based exercises.

B. Additional Information

Covers the theory and practice of layout and fitting pipe and structural steel. Students will learn the process of fabricating structural joints from pipe and steel through a series of competency-based exercises. These exercises will be done on paper and/or pipe and structural steel using instruction and practice fitting information.

II. Student Learning Outcomes

A. Subject Matter

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

1. Demonstrate the safe use of shop equipment and hand tools.
2. Set-up, perform and use equipment.
3. Demonstrate the correct procedure of measuring and the use of layout tools.
4. Demonstrate the procedures for fabricating fittings.
5. Identify and list the various types of brackets that apply.
6. Identify structural shapes.
7. Identify the variations in pipe schedules and weight.
8. Identify and fabricate templates.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills

Critical Thinking Skills: Students must analyze situations and make decisions in materials and techniques and make judgments in accordance with American Welding Society standards.

Quantitative Reasoning: Students must use trigonometry as well as make precision measurements and figure acceptable tolerances within American Welding Society guidelines.

Ethical Decision Making

Students will evaluate work to meet American Welding Society standards and guidelines as well as evaluate how stakeholders are affected by the quality and safety of the finished welds.

III. Major Course Topics

- A. Demonstrate the safe use of shop equipment and hand tools.
- B. Set-up, perform and use equipment.
- C. Demonstrate the correct procedure of measuring and the use of layout tools.
- D. Demonstrate the procedures for fabricating fittings.
- E. Identify and list the various types of brackets that apply.
- F. Identify structural shapes.
- G. Identify the variations in pipe schedules and weight.
- H. Identify and fabricate templates.