

University of Arkansas - Fort Smith
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General Syllabus

WELD 24844 Pipe Welding

Credit Hours: 4

Lecture Hours: 2

Laboratory Hours: 4

Prerequisite: WELD 22844 ARC Welding – Advanced

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Designed to develop the skills used in the welding of both transmission pipeline and piping systems. Emphasis is placed on the skills needed to meet the standards of the American Welding Society and American Society of Mechanical Engineers.

B. Additional Information

This course is out of position welding of pipe in the 2G, 5G, and 6G positions with E6010 & E7018 electrodes. Two different methods for the root pass on open V butt welds will be used. Testing of weldments will be done with destructive and non-destructive methods.

II. Student Learning Outcomes

A. Subject Matter

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

1. Demonstrate appropriate safety procedures and precautions.
2. Manipulate electrodes appropriately for the weld.
3. Demonstrate appropriate technique and procedures for inter-pass and post weld clean-up
4. Perform appropriate welding procedures for joint design and fit-up
5. Fixture and Jigs
6. Demonstrate groove welds
7. Demonstrate appropriate use of welding symbols

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 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. Electrode angles and travel speed by size and appearance of weld beads according to code standards.
- B. Welding symbols of the American Welding Society
- C. Fixtures and/or jigs
- D. Groove welds according to essential variables of ASME welding code for guided bend test
- E. 2G, 5G and 6G positioning