

University of Arkansas - Fort Smith
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General Syllabus

WELD 23844 TIG Welding - Advanced

Credit Hours: 4

Lecture Hours: 2

Laboratory Hours: 4

Prerequisite: WELD 13844 TIG Welding – Basic

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Study and practice of the gas tungsten arc welding process. Techniques of making welds in the vertical and horizontal positions are mastered on carbon steel, aluminum, and stainless steel. American Welding Society workmanship samples will be fabricated and welded as required.

B. Additional Information

This course provides the student with a thorough technical understanding of gas tungsten welding, arc characteristics and welding safety. Students are presented material on welding characteristics of carbon steel, stainless steel and aluminum.

II. Student Learning Outcomes

A. Subject Matter

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

1. Perform out-of-position welding of fillet and groove welds on mild steel, aluminum and stainless steel.
2. Prepare final welding of fabrication projects.
3. Demonstrate pipe welding techniques.
4. Set up equipment – air-cooled.

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. Out-of-position welding
- B. Fabrication projects
- C. Pipe welding techniques
- D. Equipment set up – air cooled