# DANVILLE AREA COMMUNITY COLLEGE

**COURSE NUMBER: COURSE TITLE:**

**DIVISION:**

Weld270 TIG

Technology

# SEMESTER CREDIT

**HOURS:** 4

# PREREQUISITES: None

**FACULTY:** Bob Skinner 217-443-8791



# COURSE DESCRIPTION:

All aspects of TIG welding are covered. Electrode preparation, striking the TIG arc, length of TIG arc and breaking of the arc. The students will enhance their skills by making vertical and overhead welds on pipe, aluminum, and stainless steel. Set up and adjustment of

Equipment is stressed.

# COURSE OBJECTIVES / GOALS:

1. Develop a complete awareness of safety. All students MUST pass the safety test to continue the course.
2. Student will learn how to set up TIG equipment and be able to properly adjust it.
3. Student will learn how to select the proper type of current and the current setting for the particular job he or she is performing.
4. Student will learn the controls on the welding machine.
5. Student will learn how to select the correct filler wire for the metal being used. Student will learn the basic operational steps for turning on and for shutting down the equipment.
6. Student will have an opportunity to make welds with the TIG equipment on: aluminum, steel, and stainless steel.
7. Student will study the use of shielding gas and gas combinations, clearing, and safety procedures associated with TIG welding.
8. Electrode preparation, length of arc, and breaking the arc will be covered.
9. Student will learn proper torch angle and how to use the manipulative skills related to TIG welding.
10. Student will be able to make adjustments more precise according to the way the individuals welds.
11. Determine the correct filler rod for the metal being welded.
12. Tungsten electrode preparation will be the complete responsibility of the student. 13. Students will practice making welds using the five basic types of joints.

14. Student will work with flat and horizontal positions, but special emphasis will be given to vertical and overhead positions as well.

# TOPICAL OUTLINE:

* Perform safety inspections of equipment and accessories
* Equipment adjustments
* Set-up for gas tungsten arc welding operations on plain carbon steel, aluminum, and stainless steel.
* Operate gas tungsten arc welding equipment
* Make fillet welds, all positions, on plain carbon steel using the gas tungsten arc welding process
* Make groove welds, all positions, on plain carbon steel using the gas tungsten arc welding process
* Make 2F-3F fillet welds on aluminum using the gas tungsten arc welding process
* Make 1G groove welds on aluminum using the gas tungsten arc welding process
* Make 2F-3F fillet welds on stainless steel using the gas tungsten arc welding process
* Make 1G-2G groove welds on stainless steel using the gas tungsten arc welding process
* Make 1G-2G-SG-6G grove welds on plain carbon steel pipe

# WEEKL¥ ACTIVITIES:

* Wednesday and Thursday are set up for lectures and reviews of test materials and welding in lab.
* Monday and Tuesday we test on the reviews of week before and welding in lab.

# TEXTBOOK / SPECIAL MATERIALS:

Welding Principles & Applications. 7th ed. By Larry Jeffus Protective clothing, gloves, safety glasses

# EVALUATION:

Attendance

Review Test (Must be turned in on assigned date) Lab

Final Exam

This workforce solution was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timelines, usefulness, adequacy, continued availability, or ownership. This solution is copyrighted by the institution that created it. Internal use, by an organization and/or personal use by an individual for non-commercial purposes, is permissible. All other uses require the prior authorization of the copyright holder.