

WELD 131 Articulation Competencies

Gas Welding (3 Credits)

Fundamentals and experience in the operation of oxyacetylene welders and cutters in flat, horizontal, vertical and overhead positions and an introduction to aluminum and stainless steel welding and brazing using TIG welding machines.

Upon completion of this course, successful students will score 80% or better on the following competencies to receive WVC college credits.

Student Learning Outcomes:

CATEGORIES			
1. Problem Solving: A. Critical Thinking B. Creative Thinking C. Quantitative Reasoning D. Qualitative Reasoning	2. Communication: A. Oral Expression B. Written Expression C. Artistic Expression	3. Social Interaction: A. Collaboration B. Ethical Conduct C. Professional Conduct D. Cultural Diversity	4. Inquiry: A. Information Literacy B. Research C. Documentation

Course Competencies Checklist:

- Safely function in metal shop environment. (1A, 2A,B, 3A,B,C, 4A,B,C)
- Use basic tooling such as: (1A,B,C,D, 2A, 3B, 4A,B,C)
 - Bench grinders
 - Hand grinders
 - Hand tooling
 - Band saws
 - Iron workers
 - Shears
 - Chop saws
- Identify common welding symbols and terminology. (4A,B,C)
- Use TIG welders (Tungsten Inert Gas). (2A, 3A,B,C,D, 4A,B,C)
- Use oxy/acc torches and cutters. (2A, 3A,B,C,D, 4A,B,C)
- Braze steel, brass and or copper. (1A,B,C,D, 2A, 4A,B,C)
- TIG weld aluminum. (1A,B,C,D, 2A, 4A,B,C)
- TIG weld stainless steel. (1A,B,C,D, 2A, 4A,B,C)

Program Outcomes:

Upon completion of this program, successful students will have acquired the skills and abilities to:

- Demonstrate standard shop safety procedures
- Apply welding theory and knowledge of common terms used in the industry to oxy/fuel gas and electric arc welding processes
- Apply a variety of standard and exotic welding techniques.
- Operate various shop fabrication equipment
- Use torches and fuel gases to produce durable parts.
- Read, interpret and use shop drawings and specifications in the fabrication and making of durable goods.
- Use effective reading, thinking, mathematical and written communication skills in workplace environments.
- Employ problem solving skills
- Be prepared to take welder qualification test in accordance with Washington Association of Building Organization (WABO) utilizing the SMAW process.

Core Topics:

- TIG torch usage and care
- Common symbols and terminology
- Use of common gas welding filler material (rod).
- Gas brazing
- Gas welding
- Gas cutting
- Safety
- Use of hand tools
- Use of fabrication tooling (benders, presses, saws etc..)