WELD 132 Articulation Competencies

*Arc Welding (3 Credits)*

**Fundamentals and experience in operation of AC and DC welders in flat, horizontal, vertical and overhead positions using a variety of welding electrodes, including low-hydrogen rods. Introduction to MIG (Metallic Inert Gas) or GMAW (Gas Metal Arc Welding) included.**

*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 3. **Social Interaction**: A.Collaboration

B. Creative Thinking B. Ethical Conduct

C. Quantitative Reasoning C.Professional Conduct

D. Qualitative Reasoning D. Cultural Diversity

1. **Communication**: A. Oral Expression 4. **Inquiry: A.** Information Literacy

B. Written Expression B. Research

C. Artistic Expression 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 arc welders AC and DC. (2A, 3A,B,C,D, 4A,B,C)
* Use MIG welders. (2A, 3A,B,C,D, 4A,B,C)
* Use a plasma cutter. (2A, 3A,B,C,D, 4A,B,C)

Core Topics:

* Electric arc AC and DC
* Common symbols and terminology
* Use of common sheilded electrodes (Ex. 7018, 6011, 6013 etc..)
* MIG welding (solid core)
* Plasma cutting
* Safety
* Use of hand tools
* Use of fabrication tooling (benders, presses, saws etc..)

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.