Welding

The Welding Technician

Welding is a high-tech industry that can take you places all over the world. From ladders to aircraft carriers, from NASCAR to national defense, and from the laboratory to sales and repair, the varied welding industry impacts virtually every industry. Technology is creating more uses for welding in the workplace. The Welding program is designed to prepare students to support industrial, transportation, oil and gas, constructing, and many other industries with welding skills. The work of welders includes joining pipe sections for oil and natural gas pipelines, working in numerous industrial environments, building ships, and supporting construction. Students can serve in positions such as Welders, Cutters, Solderers and Brazers.

The Welding Program

This course covers the following key areas and topics:

- Welding Safety: Safety equipment, protective clothing, and procedures applicable to the cutting and welding of metals
- Welding Symbols: Identification and explanation of different type of welding symbols; reading welding symbols on drawings, specifications, and Welding Procedure Specifications (WPS)
- Welding Drawings: Identification and explanation of welding detail drawings
- Oxyfuel Cutting: Safety requirements, oxyfuel cutting equipment and setup, and procedures
- Plasma Arc Cutting: Safety requirements, plasma arc cutting equipment, and methods
- Air-Carbon Arc Cutting and Gouging: Safety requirements, air-carbon arc cutting equipment and processes, and procedures for performing washing and gouging activities
- Base Metal Preparation: Methods for cleaning and preparing all types of base metals for cutting or welding
- Weld Quality: Codes that govern welding, including marine welds, weld imperfections and causes, non-destructive testing, visual inspection criteria, welder qualification tests, and the importance of quality workmanship
- SMAW –SMAW welding and welding safety, methods, and tools; beads and fillet welds; groove welds with backing

Education & Certification

- The Welding student should have or be pursuing a high school diploma or GED.
- All students will be certified by the American Welding Society (AWS) that they successfully completed the AWS Schools Excelling through National Skill Standards Education (SENSE) Entry Welder Program in the Shielded Metal Arc Welding Process

Detailed Program Objectives

- Describing basic welding processes, the welding trade, and training/apprenticeship programs
- Applying welding safety practices and using personal protective equipment related to the welding trade
- Applying knowledge and skills related to safety practices, equipment, consumables, setup, and use of equipment for oxyfuel cutting, arc cutting, and air-carbon arc cutting and gouging
- Applying knowledge and skills related to safe preparation of base metals and basic cleaning
- Applying knowledge of various codes and assessing weld quality
- Applying knowledge and skills related to SMAW (shielded metal arc welding) including safety, equipment, setup, electrodes and their care and handling, bead and fillet welds, groove welds with backing, and open-root groove welds
- Applying knowledge of welding symbols and welding drawings