

WELDING TECHNOLOGY: ARC WELDING (CERT)

CERTIFICATE OF ACHIEVEMENT

This certificate program is designed to provide students with the skills required to obtain certification in the SMAW and FCAW welding processes (e.g., multiple structural steel welding certifications). The certificate program requirements include technical math skills and reading blueprints used in the industry, as well as an Advanced Arc Welding Laboratory. Students completing this program will obtain the necessary technical knowledge, practical welding skills, and welding certifications required to enter the workforce as a Welder specializing in heavy construction. Various municipalities, fabrication companies, and local unions seek capable graduates with this training to construct and maintain large scale projects such as buildings, bridges, ships, and infrastructure.

Program Student Learning Outcomes

- Students will assemble and weld various projects using a standard tape measure to make accurate measurements using the fractional measurement system.
- Students will correctly setup oxyacetylene flame cutting equipment and perform manual oxyacetylene flame cutting operations with and acceptable appearance.
- Students will correctly setup plasma arc cutting equipment and perform manual plasma arc cutting operations with an acceptable appearance.
- Students will fabricate and weld various projects by converting decimal measurements into the fractional measurement system.
- Students will interpret fillet weld symbols used on blueprints to assemble and weld various structural joint designs.
- Students will interpret groove weld symbols used on blueprints to assemble and weld various structural joint designs.
- Students will use the shielded metal arc welding process with E7018 and E6010 arc welding electrodes to produce fillet welded tee joint and lap joint projects with an acceptable appearance.

Program Requirements

Code Number	Course Title	Units
Required Courses		
WELD 149	Welding Shop Math	4.0
WELD 159	Blueprint Reading for the Welding Trades	4.0
WELD 120	Beginning Arc Welding	5.0
WELD 200	Intermediate Arc Welding	4.0
WELD 210L	Advanced Arc Welding Laboratory	2.0
Total Units		19

Recommended Courses

Code Number	Course Title	Units
MTT 100	Machine Tool Introduction	2.0
WELD 254L	Pipe Welding Level 2	2.0
WELD 256L	Pipe Welding Level 3	2.0
WELD 258L	Pipe Welding Level 4	2.0
WELD 160	Welding and Metal Fabrication Safety	1.0

WELD 281L	Shielded Metal Arc Welding (SMAW) Specialty Laboratory	1.0
WELD 282L	Semiautomatic Welding Process Specialty Laboratory	1.0
WELD 283L	Gas Tungsten Arc Welding (GTAW) Specialty Laboratory	1.0
WELD 100	Welding Fundamentals	2.5
WELD 212L	Shielded Metal Arc Welding (SMAW) Certification Laboratory	2.0
WELD 214L	Flux Cored Arc Welding (FCAW) Certification Laboratory	2.0
WELD 220	Certification and Licensing for Welders	2.0
WELD 240L	Intermediate Gas Tungsten Arc Welding Laboratory	2.0
WELD 250L	Advanced Gas Tungsten Arc Welding Lab	2.0
WELD 251L	Advanced ARC Welding Specialty Lab	1.0
WELD 270	Structural Layout	2.5