

# WELDING TECHNOLOGY: WELDING FABRICATION AND LAYOUT (CERT)

## CERTIFICATE OF ACHIEVEMENT

The Certificate program in Welding Fabrication and Layout combines general education courses with courses designed to teach students metal fabrication and welding techniques along with proper use of industrial metal fabrication equipment used in the industry to build and fabricate everything from racecars to high rise buildings. Coursework in the certificate program also includes beginning and intermediate Arc Welding courses, as well as coursework in technical math skills and reading blueprints used in the industry. Students completing this program will obtain the necessary technical knowledge, practical welding skills, and fabrication experience to enter all forms of the metal fabrication industry. Employers seek capable graduates with these valuable skills.

## 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 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 industrial metal fabrication equipment to cut, cope, miter, and fabricate various structural steel parts to specific dimensions.
- Students will use oxyacetylene flame cutting and plasma arc cutting equipment to cut, cope, miter, and fabricate various structural steel parts to specific dimensions.

## Program Requirements

Code Number	Course Title	Units
<b>Required Courses</b>		
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 170	Structural Fabrication	2.0
WELD 200	Intermediate Arc Welding	4.0
<b>Total Units</b>		<b>19</b>

## 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 172L	Advanced Structural Fabrication Laboratory	1.0
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 260L	Gas Tungsten Arc Welding (GTAW) Aerospace Certification Laboratory	2.0
WELD 270	Structural Layout	2.5