

Metal Fabrication/Welding Certificate

The Johnson County Community College Metal Fabrication/Welding Technology Program is in alignment with the National Center for Education Statistics (NCES) CIP code 48.0508: Welding Technology/Welder. This program prepares individuals to apply technical knowledge and skills to join or cut metal surfaces. This program includes instruction in arc welding, resistance welding, brazing and soldering, cutting, high-energy beam welding and cutting, solid state welding, ferrous and non-ferrous materials, oxidation-reduction reactions, welding metallurgy, welding processes and heat treating, structural design, safety, and applicable codes and standards.

The JCCC Metal Fabrication/Welding program is an accredited AWS (American Welding Society) SENSE (Schools Excelling through National Skills Education) Level 1 and Level 2 program. AWS SENSE is a comprehensive set of minimum standards and guidelines for welding education programs. The Metal Fabrication/Welding certificate teaches welding skills in the areas of shielded metal arc welding (SMAW), gas metal arc welding (GMAW), flux core arc welding (FCAW), gas and tungsten arc welding (GTAW), oxy-fuel welding (OFW), oxy-fuel cutting (OFC), and plasma arc cutting (PAC). The students will also receive training in safety and basic blueprint reading, and metallurgy. This certificate allows students to obtain a General Industry OSHA 30 course completion card and prepares students for American Welding Society (AWS) D1.1 – on 3/8" thick carbon steel in all plate positions. This certificate gives the student the skills needed to successfully enter the field of welding.

(Major Code 5380; CIP Code 48.0508)

Welding (Metal Fabrication) Program web page (<http://www.jccc.edu/academics/credit/welding/>)

Program Learning Outcomes

Johnson County Community College (JCCC) is committed to offering high-quality affordable programs that focus on developing knowledge and skills conducive to life-long learning. Both the General Education Student Learning Outcomes (<https://www.jccc.edu/about/leadership-governance/administration/institutional-effectiveness-branch/outcomes-assessment/learning-outcomes.html>) and Institutional Learning Outcomes (<https://www.jccc.edu/about/leadership-governance/administration/institutional-effectiveness-branch/outcomes-assessment/institutional-learning-outcomes.html>) convey JCCC's approach to programmatic outcomes. Additionally, students who successfully complete the Metal Fabrication/Welding Certificate from JCCC will be able to:

- Perform welding and related tasks in a safe manner by utilizing proper PPE and precautions.
- Perform simulation welder qualification testing using Shielded Metal Arc Welding, Gas Metal Arc Welding, Flux Cored Arc Welding, and Gas Tungsten Arc Welding to a minimum standard of AWS D1.1.
- Apply technical knowledge and technique to properly weld carbon steels as well as some aluminum and stainless operations.

Certificate Requirements

First Semester

Code	Title	Hours
COMS 155	Workplace Skills	1
MFAB 124	Introduction to Welding	3
MFAB 126	Cutting Processes for Welding*	3
MFAB 131	Shielded Metal Arc Welding (SMAW) I*	3
MFAB 180	Blueprint and Symbols Reading for Welders	2
MFAB 205	Shielded Metal Arc Welding (SMAW) II*	3
Total Hours		15

Second Semester

Code	Title	Hours
CMGT 100	Industrial Safety/OSHA-30	3
MFAB 133	Gas Metal Arc Welding (GMAW) I*	3
MFAB 136	Gas Tungsten Arc Welding (GTAW) I*	3
MFAB 210	Gas Metal Arc Welding (GMAW) II*	3
MFAB 240	Metallurgy	2



MFAB 241	Gas Tungsten Arc Welding (GTAW) II*	3
Total Hours		17

Total Program Hours: 32

* This course has registration requirements.