



## Industrial Technology/Manufacturing

# Manufacturing Welding Certificate CIMA-1170

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Get started in an exciting new career in welding. During this short-term training program, students will experience a hands-on learning opportunity in Gas Metal Arc Welding. General welding knowledge, quality, and safety procedures are stressed. Students will progress through basic welding techniques in flat and horizontal positions, as well as utilize axial spray transfer. Included in the program is a Fabrication Math and Blueprint Reading class where students will learn essential math and blueprint reading skills to become a successful fabricator and/or welder in today's high-tech manufacturing world.

Ready to learn more? Complete our information form at [www.kirkwood.edu/ce\\_certificatesform](http://www.kirkwood.edu/ce_certificatesform) or contact a student advisor today at [ceadvising@kirkwood.edu](mailto:ceadvising@kirkwood.edu) or 319-398-5529.

### **Course List:**

Fabrication Math and Blueprint Reading; Gas Metal Arc Welding Short Circuit Transfer

### **Delivery Method:**

Classroom

### **Length of Program and CEU Credits:**

212 hours, 25.44 CEUs

### **Entrance Requirements/Prerequisites:**

None

### **Other Items to Know About this Course:**

The following textbooks will need to be purchased separately: "Blueprint Reading for Welders & Fitters" (Hobart; EW-549), "Welding Symbols" (Hobart; EW-342) "GMAW Tech Guide EW-473" (Hobart; ISBN 9781936058174) and "GMAWB EW-369" (Hobart; ISBN 9781936058068). Handouts, if required, will be provided in class. Students must also bring a welding helmet and gloves, safety glasses, steel-toe boots/shoes, a long-sleeve shirt, ear plugs, a chipping hammer, a wire brush, and pliers/vice grips on the first day of the program.

### **Program Completion Requirements:**

This is a pass/fail certificate. Mandatory safety training and 70 percent attendance is required to complete and receive the certificate.

### **Industry Credentials Earned:**

None. This program does not award any nationally recognized certification upon completion.

### **Pathway to Credit Program:**

None

### **Tuition Assistance:**

Yes

### Course Objectives:

- Examine blueprints to read and utilize information contained in title blocks, notes and specifications, identify various types of print lines, recognize and read dimensions, identify conventional and baseline dimensioning, specify various structural shapes and use auxiliary views.
- Read sections as they relate to more complicated prints and utilize detail drawings, assembly drawings, and subassembly prints.
- Create basic sketches to quickly express an idea to later be transformed into a blueprint.
- Prepare a bill of materials to be used in a fabrication project.
- Read and recognize weld symbols and abbreviations to specify and accurately size a variety of welds such as: Backing and melt, fillet, groove, open root, plug, slot, surfacing, edge, spot, projection, stud and multiple joint seam welds.
- Understand basic joints for weldments and why they are chosen.
- Perform safety inspections on equipment and projects.
- Set up GMAW-S equipment and complete minor external repairs.
- Complete a fillet weld in the flat, horizontal, vertical, and overhead positions.
- Complete a groove weld in the flat, horizontal, vertical, and overhead positions.
- Analyze completed welds and adjust welding technique as needed.

### Learning Outcomes:

The skills and knowledge in this program will prepare students to produce and evaluate welds to ensure AWS standards are met. Students will also be able to examine, understand, and produce blueprint drawings. These skills are invaluable for employability as a fabricator and/or welder.

### Careers:

Source: Career Coach 2018, Kirkwood Community College region.

#### **Welders, Cutters, Solderers, and Brazers**

Average hourly earnings: \$18.20

Starting hourly earnings: \$12.73

Projected job openings (2018 – 2023): 520

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#### **Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders**

Average hourly earnings: \$17.65

Starting hourly earnings: \$12.28

Projected job openings (2018 – 2023): 51

### Related Information:

NA

### LEARN MORE

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**Continuing Education**  
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