

INTEGRATED METALS: WELDING TECHNOLOGY - CERTIFICATE

Certificate

Faculty Adviser

Valorie Gilbert: 503-491-7559 | Room IT48 | Valorie.Gilbert@mhcc.edu

This program is designed to prepare students with little or no welding skills to enter the field with confidence. Students will learn many types of welding: shielded metal arc; gas metal arc; flux cored arc; and gas tungsten arc. Students will also learn blueprint reading; metallurgy; and CNC (computer numerical control) plasma cutting. To complete the program in one school year, students must start fall term and attend full time during the day. Students may also attend part time in the evening. Nearly half of the requirements for the Integrated Metals AAS degree will be completed during this program.

The Welding Technology certificate may be started in fall or winter terms. To complete in one school year students must start in fall term and attend full time during the day. Students may also attend part-time in the evening. Students completing this certificate will have completed nearly half of the degree requirements for the Integrated Metals AAS degree.

Program Outcomes

At the completion of this program, students should be able to:

- Demonstrate safety procedures and safety inspections for welding processes and related equipment
- Identify welding equipment and accessories and explain power source principles of operation
- Read, interpret and apply blueprint specifications for the production and inspection of manufactured work pieces
- List and perform set-up, adjustments and operations of welding and oxy-fuel cutting equipment in the preparation and completion of welding practice plates
- Describe and perform welding processes
- Describe and apply the variables and techniques used to weld carbon steel to blueprint specifications with regard to joint types, weld types and positions of welding
- Visually examine welds for discontinuities, defects, correct weld size and placement, providing solutions for welding procedure errors
- Produce acceptable test plate weldments according to American Welding Society (AWS) code specifications

Students are required to maintain a minimum grade of "C" in all IMTL courses.

General education courses (such as math, writing, health, etc.) can be taken during any term, or before starting the program.

First Quarter

Fall		Credits
IMTL120	SMAW (Shielded Metal Arc Welding/Stick) Theory	2
IMTL121	SMAW (Shielded Metal Arc Welding/Stick) Lab	3

IMTL124	Blueprint Reading for Welding Applications	3
IMTL155	Industrial Safety	3
IMTL171	Welding Certificate Program Lab I	1
WR101 or WR121Z	Workplace Communications I ★ or Composition I ★	3-4

Credits 15-16

Second Quarter

Winter

IMTL134	Metallurgy Theory	3
IMTL135	Metallurgy Lab	1
IMTL140	GMAW/FCAW (Gas Metal and Flux Cored Arc Welding/Wire Feed) Theory	2
IMTL141	GMAW/FCAW (Gas Metal and Flux Cored Arc Welding/Wire Feed) Lab	3
IMTL172	Welding Certificate Program Lab II	1
IMTL143 (Winter) or IMTL163 (Spring)		3-4
Human Relations requirement (https://catalog.mhcc.edu/degree-certificate-requirements/aas/#human)		3-4

Credits 16-18

Third Quarter

Spring

IMTL128	GTAW (Gas Tungsten Arc Welding/ TIG) Theory	2
IMTL129	GTAW (Gas Tungsten Arc Welding/ TIG) Lab	3
IMTL152	Welding Processes and Procedures	2
IMTL160	Fabrication Practices Theory	2
IMTL161	Fabrication Practices Lab	3
IMTL173	Welding Certificate Program Lab III	1
MTH065 or MTH058	Beginning Algebra II ★ (or higher) or Quantitative Reasoning I	4-6

Credits 17-19

Total Credits 48-53