

Integrated Metals: Welding Technology

Limited Entry Certificate

MHCC Faculty Advisers

Rick Walters: 503-491-7209 Room IT 41
Richard.Walters@mhcc.edu

Steven Davis: 503-491-7629 Room IT 44
Steve.Davis@mhcc.edu

The certificate options under the Integrated Metals - Welding Technology program are designed to prepare the person with little or no welding skill to enter the welding field with skill, knowledge and confidence. Also, they are designed for those wishing to upgrade their welding skills or to learn a new process. The curriculum is designed to train welders to produce weldments that meet American Welding Society (AWS) standards. Students are expected to maintain a minimum grade level of "C" on core curriculum classes to progress in the program.

Program Outcomes

At the completion of this program, the student 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
- List and perform set-up, adjustments and operations of welding and cutting equipment in preparing and the completion of welding practice plates
- Describe and perform welding processes as they relate to the welding of ferrous and non-ferrous metals
- Identify various electrodes, filler wires, shielding gasses and current types and their relationship to base-metal varieties

NOTE: The course requirements for this program are subject to change each academic year. For MHCC certificate/degree requirements, a student must follow the program requirements the year the student is officially admitted to the program or the year the student is completing the program.

- Describe and apply the variables and techniques used to weld carbon steel, stainless steel and aluminum to print specifications with regard to joint types, weld types and positions of welding
- Visually examine welds for discontinuities, defects, correct weld size and placement, and provide solutions for welding procedure errors
- Produce acceptable test plate weldments according to American Welding Society (AWS) Standards.

What are the employment opportunities?

Students who apply themselves in the program and obtain a satisfactory level of competence in welding should be able to secure employment in many areas, including ship repair, metal fabrication, construction and maintenance welding. Most companies require the prospective employee to pass a welding test as a condition of employment. This program will assist the student in preparing for welder qualification testing.

Students completing the 1 year certificate will also have completed nearly one half of the degree requirements for the Integrated Metals AAS (Associate of Applied Science) Degree. Students have the opportunity to complete their testing for AWS certification in one or more positions and processes that will provide the skill credential for entry into a position in industry as a certified welder.

First Quarter	Credits
IMTL114 Blueprint Reading for the Metals Industry.....	4
IMTL120 SMAW (Shielded Metal Arc Welding / Stick) Theory	2
IMTL121 SMAW (Shielded Metal Arc Welding / Stick) Lab	4
IMTL128 GTAW (Gas Tungsten Arc Welding/TIG) Theory	2
IMTL129 GTAW (Gas Tungsten Arc Welding/TIG) Lab	2
WR101 Workplace Communications or WR121 English Composition	3

17

Second Quarter	Credits
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	4
IMTL143 CNC Cutting	4
MTH60 Beginning Algebra I	4

18

Third Quarter

IMTL152 Welding Processes and Procedures.....	2
IMTL160 Fabrication Practices Theory	2
IMTL161 Fabrication Practices Lab	3
IMTL163 Welding Certification Preparation Lab.....	4
MTH65 Beginning Algebra II ¹	4
PSY101 Psychology of Human Relations or HUM202 Age of Technology: Ethics in the Workplace	3

18

¹ Students may not use demonstrated proficiency on the College Placement Test (CPT) to satisfy this requirement.