



Applied Science and Engineering Technology Division

2019-2020

The associate of applied science degree with specialization in welding technology parallels the high technological demands in the joining and fabrication areas of manufacturing industries. The welding laboratory contains state-of-the-art equipment for Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW), as well as multiple thermal cutting process applications. The subject matter and laboratory experiences in the welding technology program provide training for the serious welding technologist, with emphasis on welding skill development, welding metallurgy, weldment evaluation and testing, and related technical courses. A pathway to certification in nondestructive testing (NDT) is also available for students interested in weld inspection. Students can take individual NDT courses or pursue the entire certificate for additional credentials. The MCCC welding technology program articulates with Ferris State University's four-year degree program.

Certificate programs are also available for students interested in rapid skills development with an accelerated pathway into the welding industry. MCCC offers both beginning and advanced welding certificates as well as offers AWS SENSE QC-10 and QC-11 welding process certifications. MCCC also has been a certified MDOT testing facility for the past five years.

Career Opportunities

Students are prepared for many welding-related careers and trades, including welding inspection, sales, service, design, maintenance and engineering. The college offers state and American Welding Society welder certification testing. Graduates of this program



will be prepared for entry-level employment in the following areas:

- Engineering technician
- Pipefitter
- Production welder
- Weld inspector
- Welder/fabricator
- Welding metallurgy technician
- Welding sales/service technician

Note: The following codes identify courses that satisfy MCCC's General Education Requirements:

- (C1) GE Natural Sciences Competency
- (C2) GE Mathematics Competency
- (C3) GE Writing Competency
- (C4) GE Computer Literacy Competency
- (C5) GE Human Experience Competency
- (C6) GE Social Systems Competency

Credits

Required General Education Courses

21

C1	PHY 101 (Technical Physics) or PHY 151 (General Physics I) or CHEM 150 (Fundamental Principles of Chemistry) or CHEM 151 (General College Chemistry I)	4
C2	MATH 124* (Technical Mathematics II) or competency	4
C3	ENGL 151 (English Composition I)	3
C4	MDTC 160 (Mechanical Drafting CAD I)	4
C5	Human Experience Competency.	3
C6	Social Systems Competency	3

See the General Education Requirements on the MCCC website for a list of courses that satisfy the General Education Learning Competencies.



WELDING TECHNOLOGY

	Credits
Required Core Courses	43
1st Semester	
MATL 101 (Industrial Materials)	3
WELD 100 (Introduction to Welding Processes)	4
MATH 119* (Elementary Technical Mathematics)	2
2nd Semester	
WELD 110 (Welding Symbols and Blueprint Reading).	2
WELD 114 (GMAW and GTAW Applications)	6
MATH 124* (Technical Mathematics II)	4
3rd Semester	
METC 220 (Statics & Strength of Materials)	4
WELD 102 (Advanced SMAW)	6
WELD 103 (Weldment Evaluation and Testing)	3
4th Semester	
WELD 105 (Welding Metallurgy)	3
WELD 106 (Basic Pipe Welding)	6
Spring	
WELD 216 (Basic Pipefitting)	4
Total Degree Requirements	64 credits
Total Degree Cost	83 minimum billable contact hours

* MATH 119 (Elementary Technical Mathematics) and MATH 124 (Technical Mathematics II) are required for students whose goal is to complete the associate of applied science degree and seek employment. MATH 157 (College Algebra) and MATH 159 (Trigonometry and Analytical Geometry) are recommended for students interested in transferring to a four-year institution. Other MATH courses may be selected for transfer depending on the student's choice of transfer institution. Students interested in transfer are encouraged to seek the assistance of a faculty advisor or admissions counselor.

Welding Technology Certificate Programs

The college offers two levels of certificate programs in welding. The basic certificate is oriented toward developing those skills required for entry level jobs in the welding field. The advanced certificate program is also a skills intensive program but takes students through higher-level skill proficiencies, utilizing additional welding procedures and applications. All courses taken in the certificate program are applicable toward the associate of applied science degree.

Certificate Program: Basic Welding*

	Credits
WELD 100 (Introduction to Welding Processes)	4
WELD 102 (Advanced SMAW)	
or WELD 114 (GMAW and GTAW Applications)	6
WELD 103 (Weldment Evaluation and Testing)	3
WELD 110 (Welding Symbols and Blueprint Reading).	2

Total Certificate Requirements	15 credits
Total Certificate Cost	20 minimum billable contact hours

*This certificate is not federal financial aid eligible.



Certificate Program: Advanced Welding

	Credits
MATL101 (Industrial Materials)	3
WELD 100 (Introduction to Welding Processes)	4
WELD 102 (Advanced SMAW)	
or WELD 114 (GMAW and GTAW Applications)	6
WELD 103 (Weldment Evaluation and Testing)	3
WELD 105 (Welding Metallurgy)	3
WELD 216 (Basic Pipefitting)	4
WELD 110 (Welding Symbols and Blueprint Reading).	2

Total Certificate Requirements	25 credits
Total Certificate Cost	34 minimum billable contact hours

WELDING TECHNOLOGY

American Welding Society Certification

The college also offers course work to prepare students to qualify for American Welding Society certification at entry and advanced levels of proficiency. In addition to verification of skill levels to national standards, AWS certification also includes nationwide registry in the AWS bank. Equivalencies to associate of applied science degree requirements in welding are available upon completion of the certifications. See the division dean or welding instructor for further details.

American Welding Society (AWS) Advanced Level Welding Certification (conforms to AWS-QC-11 standard)

WELD 215 (Advanced Level Welding) 12

Total Certificate Requirements 12 credits
Total Certificate Cost 16.67 minimum billable contact hours

American Welding Society (AWS) Entry Level Welding Certification (conforms to AWS-QC-10 standard)

WELD 115 (Entry Level Welding) 12

Total Certificate Requirements 12 credits
Total Certificate Cost 16.67 minimum billable contact hours



Monroe County Community College is an equal opportunity institution and adheres to a policy that no qualified person shall be discriminated against because of race, color, religion, national origin or ancestry, age, gender, marital status, disability, genetic information, sexual orientation, gender identity/expression, height, weight or veteran's status in any program or activity for which it is responsible. If you have a disability and need special accommodations, please contact the Learning Assistance Laboratory at least 10 business days prior to the first class session to schedule an appointment to begin the accommodation process. The LAL phone number is 734.384.4167.

Monroe County Community College is accredited by the Higher Learning Commission.
www.hlcommission.org / (800) 621-7440

Information contained within this document is subject to change. Every effort has been made to insure the information in this program sheet is accurate at the time of publication. This program sheet may not be considered as an agreement or contract.

Main Campus

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