

# WELDING TECHNOLOGY, MANUFACTURING TECHNOLOGY (AAS)

Degree: Associate of Applied Science  
Major: Manufacturing Technology  
Emphasis: Welding Technology  
Program Code: 1332

## About This Major . . .

This Welding Technology Degree program is designed to provide training and opportunity to become proficient at SMAW, GMAW, GTAW, FCAW, OAC, PAC, blueprint reading, pipe welding, fabrication, automation, layout, mathematics, and safety. This program offers classroom lecture and related lab work. Students study welding, cutting, layout, fabrication and technical math. Safety, attitude and quality of workmanship are stressed throughout this course. The welding AAS degree prepares students for advanced level placement in a wide range of jobs in the welding industry and is designed to meet competency based standards set by the American Welding Society. This program prepares students to become AWS certified welders.

For more information on what you can do with this major, visit CMU Tech's [Programs of Study](#) page.

All CMU/CMU Tech associate graduates are expected to demonstrate proficiency in specialized knowledge/applied learning, quantitative fluency, communication fluency, critical thinking, personal and social responsibility, and information literacy. In addition to these campus-wide student learning outcomes, graduates of this major will be able to:

- Apply business communication using listening, verbal and written forms that are needed for entry level employment in the industry. (Communication Fluency)
- Apply Mathematical concepts for the Welding industry to meet entry level employment requirements. (Quantitative Fluency)
- Research, evaluate, synthesize and apply information/data relevant to the welding industry. (Critical Thinking)
- Demonstrate knowledge of terminology, symbols, business practices, principles and application of associated technical skills in the industry. (Specialized Knowledge)
- Perform the necessary applied welding skill sets to fulfill the needs of entry level employment. (Applied Learning)
- Demonstrate ethical and civic responsibility necessary for employees in the welding industry. (Specialized Knowledge)

## Requirements

Each section below contains details about the requirements for this program. Select a header to expand the information/requirements for that particular section of the program's requirements.

**To print or save an overview of this program's information, including the program description, learning outcomes, requirements, suggested course sequencing (if applicable), and advising and graduation information, scroll to the bottom of the left-hand navigation menu and select "Print Options."** This will give you the options to either "Send Page to Printer" or "Download PDF of This Page." The "Download PDF of This Page" option

prepares a much more concise presentation of all program information. The PDF is also printable and may be preferable due to its brevity.

## Institutional Degree Requirements

The following institutional degree requirements apply to all CMU and CMU Tech Associate of Applied Science (AAS) degrees. Specific programs may have different requirements that must be met in addition to institutional requirements.

- 60 semester hours minimum.
- Students must complete a minimum of 15 of the final 30 semester hours of credit at CMU/CMU Tech.
- 2.00 cumulative GPA or higher in all CMU/CMU Tech coursework.
- A course may only be used to fulfill one requirement for each degree/certificate.
- No more than six semester hours of independent study courses can be used toward the degree.
- Non-traditional credit, such as advanced placement, credit by examination, credit for prior learning, cooperative education and internships, cannot exceed 20 semester credit hours for an AAS degree.
- Pre-collegiate courses (usually numbered below 100) cannot be used for graduation.
- Capstone exit assessment/projects (e.g., Major Field Achievement Test) requirements are identified under Program-Specific Degree Requirements.
- The Catalog Year determines which program sheet and degree requirements a student must fulfill in order to graduate. Visit with your advisor or academic department to determine which catalog year and program requirements you should follow.
- See "Requirements for Undergraduate Degrees and Certificates" in the catalog for a complete list of graduation requirements.

## Specific to this program:

- 65 semester hours total for the AAS, Manufacturing Technology - Welding Technology.

## Essential Learning Requirements

(15 semester hours)

See the current catalog for a list of courses that fulfill the requirements below. If a course is an Essential Learning option and a requirement for your major, you must use it to fulfill the major requirement and make a different selection for the Essential Learning requirement.

Code	Title	Semester Credit Hours
<b>Communication</b>		
ENGL 111	English Composition I-GTC01	3
SPCH 101	Interpersonal Communication	3
<b>Mathematics</b>		
MATH 107	Career Math (or higher)	3
<b>Other Essential Learning Core Courses</b>		
Select one Social and Behavioral Sciences, History, Natural Sciences, Fine Arts or Humanities course		3

Select one Social and Behavioral Sciences, History, Natural Sciences, Fine Arts or Humanities course 3

**Total Semester Credit Hours 15**

## Other Lower Division Requirements

Code	Title	Semester Credit Hours
<b>Wellness Requirement</b>		
KINE 100	Health and Wellness	1
Select one Activity course		1
<b>Total Semester Credit Hours</b>		<b>2</b>

## Program Specific Degree Requirements

(48 semester hours, must earn a grade of "C" or better in each course.)

- Students in Welding may be required to purchase approximately \$500.00 in tools and personal safety welding equipment. This does not include required textbooks. These costs may vary with student need and brand or quality of tools or equipment purchased. All safety glasses must meet the minimum industry safety standard of Z-87 with side shields.

Code	Title	Semester Credit Hours
CADT 101	Introduction to Computers	1
ELCE 124	Electrical Safety	1
MAMT 105	Print Reading and Sketching	2
MAMT 101	Introduction to Manufacturing	2
MAMT 260	Properties of Materials	3
WELD 110	Shielded Metal Arc Welding	4
WELD 111	Shielded Metal Arc Welding 2	4
WELD 114	Oxy-Fuel Welding & Brazing	2
WELD 117	Oxy-Fuel and Plasma Arc Cutting	2
WELD 133	Fabrication & Blueprints for Welders	4
WELD 201	Gas Metal Arc Welding	4
WELD 230	Gas Tungsten Arc Welding	4
WELD 240	Pipe Welding	4
WELD 203	Flux Cored Arc Welding	4
WELD 275	Automation	4
<b>Total Semester Credit Hours</b>		<b>45</b>

Code	Title	Semester Credit Hours
<b>Restricted Electives</b>		
Select one of the following:		3
CADT 108	CAD - Mechanical	
MAMT 115	Introduction to Machine Shop	
TSTG 150	Introduction to Fluid Power	
TSTG 220	Workplace Skills	
<b>Total Semester Credit Hours</b>		<b>3</b>

## Suggested Course Plan

First Year		Semester Credit Hours
<b>Fall Semester</b>		
MAMT 105	Print Reading and Sketching	2
ELCE 124	Electrical Safety	1
WELD 110	Shielded Metal Arc Welding	4
WELD 117	Oxy-Fuel and Plasma Arc Cutting	2
MATH 107	Career Math	3
WELD 201	Gas Metal Arc Welding	4
<b>Semester Credit Hours</b>		<b>16</b>
<b>Spring Semester</b>		
WELD 133	Fabrication & Blueprints for Welders	4
CADT 101	Introduction to Computers	1
WELD 203	Flux Cored Arc Welding	4
WELD 111	Shielded Metal Arc Welding 2	4
WELD 230	Gas Tungsten Arc Welding	4
<b>Semester Credit Hours</b>		<b>17</b>
<b>Second Year</b>		
<b>Fall Semester</b>		
ENGL 111	English Composition I-GTC01	3
KINE 100	Health and Wellness	1
KINA 1XX	Activity	1
WELD 114	Oxy-Fuel Welding & Brazing	2
MAMT 101	Introduction to Manufacturing	2
WELD 240	Pipe Welding	4
Social Sciences, Natural Science, Fine Arts, or Humanities		3
<b>Semester Credit Hours</b>		<b>16</b>
<b>Spring Semester</b>		
SPCH 101	Interpersonal Communication	3
MAMT 260	Properties of Materials	3
WELD 275	Automation	4
Social Sciences, Natural Science, Fine Arts, or Humanities		3
Restricted Electives		3
<b>Semester Credit Hours</b>		<b>16</b>
<b>Total Semester Credit Hours</b>		<b>65</b>

## Advising and Graduation Advising Process and DegreeWorks

Documentation on the pages related to this program is intended for informational purposes to help determine what courses and associated requirements are needed to earn a degree. The suggested course sequencing outlines how students could finish degree requirements. Some courses are critical to complete in specific semesters, while others may be moved around. Meeting with an academic advisor is essential in planning courses and altering the suggested course sequencing. It is ultimately the student's responsibility to understand and fulfill the requirements for their intended degree(s).

DegreeWorks is an online degree audit tool available in MAVzone. It is the official record used by the Registrar's Office to evaluate progress towards a degree and determine eligibility for graduation. Students are responsible for reviewing their DegreeWorks audit on a regular basis and should discuss questions or concerns with their advisor or academic department head. Discrepancies in requirements should be reported to the Registrar's Office.

## Graduation Process

Students must complete the following in the first two months of the semester prior to completing their degree requirements:

- Review their DegreeWorks audit and create a plan that outlines how unmet requirements will be met in the final semester.
- Meet with their advisor and modify their plan as needed. The advisor must approve the final plan.
- Submit the “Intent to Graduate” form to the Registrar’s Office to officially declare the intended graduation date and commencement ceremony plans.
- Register for all needed courses and complete all requirements for each degree sought.

Submission deadlines and commencement details can be found on the [Graduation](#) web page.

If a student’s petition for graduation is denied, it will be their responsibility to apply for graduation in a subsequent semester. A student’s “Intent to Graduate” does not automatically move to a later graduation date.