

# METAL FABRICATION/ WELDING - ADVANCED

## Overview

**Metal Fabrication/Welding - Advanced Associate of Applied Science Degree**

**Program Code: 10-457-2**

For more information: [wctc.edu/metal-fab-adv](http://www.wctc.edu/metal-fab-adv) (<http://www.wctc.edu/metal-fab-adv/>)

Metal fabrication manipulates metal from one form to another for a particular purpose, while welding fuses parts together. In this program, develop advanced skills involving the intricate planning and preparing a part for cutting, fabrication and welding, while employing new techniques on a variety of materials.

**The minimum required course grades and program grade point average (GPA) for students under this catalog are:**

Core Courses = C

General Studies Courses = C-

Program GPA = 2.0

**Build your degree along a career pathway.** Start with a couple of courses or an entry-level credential to enter the job market in your area of interest, then continue with higher credentials on your educational path for job advancement and higher wages.

## Career Pathway

1. Welding Technician 19
2. Metal Fabrication/Welding 33
3. Metal Fabrication/Welding - Advanced 60

**Related certificates that can be earned along the way.**

- GMAW/Fabricator Technical Certificate (<https://catalog.wctc.edu/programs/gmaw-fabricator/>)
- Industrial Laser Operator Technical Certificate (<https://catalog.wctc.edu/programs/industrial-laser-operator/>)

## Learning Outcomes

## Program Outcomes

1. Demonstrate industry recognized safety practices.
2. Form materials to detailed drawings.
3. Cut materials to detailed drawings.
4. Join materials to detailed drawings.
5. Layout components/assemblies.
6. Inspect product.
7. Perform precision forming processes to technical drawings.
8. Perform advanced manual and automated cutting processes.

## Critical Life Skills

To help our students prepare for success in a workplace and society that is **increasingly global, multicultural and collaborative**, we provide

curricular and co-curricular opportunities to develop critical life skills. WCTC is committed to teaching all students the following skills:

- **Communication:** Demonstrate appropriate communication.
- **Critical Thinking/Problem Solving:** Demonstrate critical thinking skills to analyze situations and solve problems.
- **Relationships:** Demonstrate effective interpersonal skills.
- **Self-management:** Demonstrate responsible and respectful behavior.

## Required Courses

Listed below are the required courses for the program. To view the recommended sequence for taking courses click on the plan of study tab(s) above. Work with your Academic Advisor to design a program plan!

View your **Program Matrix** to find out when each course will be offered (term and time of day).

Code	Title	Credits
<b>Core Courses</b>		
420-120	Machine Tool/Fabrication	2
422-103	Metals Technology/Fabricators	1
442-151	Gas Metal Arc Welding 1	2
Approved Substitute: 442-150		
442-152	Gas Metal Arc Welding 2	2
Approved Substitute: 442-150		
442-171	Flux Core Arc Welding 1	2
Approved Substitutes: 442-170 OR 442-180 OR 442-181		
442-172	Flux Core Arc Welding 2	2
Approved Substitutes: 442-170 OR 442-180 OR 442-182		
442-190	Robotic Arc Welding 1	3
442-191	Robotic Arc Welding 2	3
457-110	Blueprint Reading - Fab	2
457-121	Automated Cutting Processes 1	2
457-122	Automated Cutting Processes 2	2
457-125	Manual Thermal Cutting Process	1
457-150	SolidWorks for Metal Fab	2
457-151	Advanced Forming Processes 1	1
Approved Substitute: 457-154		
457-152	Advanced Forming Processes 2	1
Approved Substitute: 457-154		
457-155	Adv Manufacturing Capstone	4
457-161	Intro to Metal Fabrication	2
Approved Substitute: 457-160		
457-162	Metal Fabrication 1	3
Approved Substitute: 457-160		
457-163	Metal Fabrication 2	2
Approved Substitute: 457-165		
457-164	Advanced Metal Fabrication	3
Approved Substitute: 457-165		
457-170	Computer Assist Prog Laser	2
Approved Substitute: 457-370		
890-108	Employment Success	1
<b>General Studies</b>		
801-136	English Composition 1	3

Approved Substitute: 801-223		
801-196	Oral/Interpersonal Comm	3
Approved Substitute: 801-198		
804-107	College Mathematics	3
Approved Substitutes: 804-115 OR 804-116 OR 804-118 OR 804-195 OR 804-198 OR (804-304 AND 804-305)		
809-195	Economics	3
Approved Substitutes: 809-143 OR 809-287		
809-199	Psychology of Human Relations	3
Approved Substitute: 809-198		
<b>Total Credits</b>		<b>60</b>

## Full-time Plan

### First Year

Fall Term 1		Credits
442-151	Gas Metal Arc Welding 1	2
457-110	Blueprint Reading - Fab	2
804-107	College Mathematics	3
<b>Credits</b>		<b>7</b>

### Fall Term 2

422-103	Metals Technology/Fabricators	1
442-152	Gas Metal Arc Welding 2	2
457-161	Intro to Metal Fabrication	2
<b>Credits</b>		<b>5</b>

### Winter Interim

890-108	Employment Success	1
<b>Credits</b>		<b>1</b>

### Spring Term 1

442-171	Flux Core Arc Welding 1	2
457-125	Manual Thermal Cutting Process	1
457-162	Metal Fabrication 1	3
<b>Credits</b>		<b>6</b>

### Spring Term 2

442-172	Flux Core Arc Welding 2	2
457-121	Automated Cutting Processes 1	2
457-163	Metal Fabrication 2	2
<b>Credits</b>		<b>6</b>

### Second Year

#### Summer Term

457-164	Advanced Metal Fabrication	3
457-170	Computer Assist Prog Laser	2
<b>Credits</b>		<b>5</b>

#### Fall Term 1

420-120	Machine Tool/Fabrication	2
457-122	Automated Cutting Processes 2	2
801-136	English Composition 1	3
<b>Credits</b>		<b>7</b>

#### Fall Term 2

442-190	Robotic Arc Welding 1	3
457-150	SolidWorks for Metal Fab	2
801-196	Oral/Interpersonal Comm	3
<b>Credits</b>		<b>8</b>

### Winter Interim

809-195	Economics	3
<b>Credits</b>		<b>3</b>

### Spring Term 1

442-191	Robotic Arc Welding 2	3
457-151	Advanced Forming Processes 1	1
457-155	Adv Manufacturing Capstone <small>This course will run 16 weeks.</small>	4
<b>Credits</b>		<b>8</b>

### Spring Term 2

457-152	Advanced Forming Processes 2	1
809-199	Psychology of Human Relations	3
<b>Credits</b>		<b>4</b>
<b>Total Credits</b>		<b>60</b>