

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/>)

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 |
|---|--------------------------------|---------|
| Core Courses | | |
| 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 |
| General Studies | | |
| 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 | | |
| Total Credits | | 60 |

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 |
| | Credits | 7 |

Fall Term 2

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

Winter Interim

| | | |
|---------|--------------------|----------|
| 890-108 | Employment Success | 1 |
| | Credits | 1 |

Spring Term 1

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

Spring Term 2

| | | |
|---------|-------------------------------|----------|
| 442-172 | Flux Core Arc Welding 2 | 2 |
| 457-121 | Automated Cutting Processes 1 | 2 |
| 457-163 | Metal Fabrication 2 | 2 |
| | Credits | 6 |

Second Year

Summer Term

| | | |
|---------|----------------------------|----------|
| 457-164 | Advanced Metal Fabrication | 3 |
| 457-170 | Computer Assist Prog Laser | 2 |
| | Credits | 5 |

Fall Term 1

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

Fall Term 2

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

Winter Interim

| | | |
|---------|----------------|----------|
| 809-195 | Economics | 3 |
| | Credits | 3 |

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 |
| | Credits | 8 |

Spring Term 2

| | | |
|---------|-------------------------------|-----------|
| 457-152 | Advanced Forming Processes 2 | 1 |
| 809-199 | Psychology of Human Relations | 3 |
| | Credits | 4 |
| | Total Credits | 60 |