

WELDING, ASSOCIATE OF APPLIED SCIENCE

The Associate of Applied Science (AAS) Welding provides the training for entry-level employment and offers the technical knowledge necessary for career advancement. Coupled with experience, the program prepares students for manufacturing employment opportunities in industry, private enterprise, supervision, and/or advanced welding technologies. The program will guide the students in developing basic pipe welding and fitting skills and introduces advanced techniques aligned with industry standards. These opportunities include welding, fabrication, inspection, estimating, and technical sales.

Several Career Pathway Certificates can lead to this degree, click here (<https://www.socc.edu/pathways/roadmapsaz/148-welding-and-fabrication-roadmap>) to view the roadmap.

According to the American Welding Society, by the year 2020 there will be a skills shortage of 291,000 jobs in the welding and fabrication and related fields.

Entry Requirements

Students are required to complete the College's placement process to determine skill level and readiness in math, reading and writing. As part of their training program, students must begin with the courses within their skill level as determined by the placement process.

Because a variety of working conditions exist in the welding field, a person generally should be in good physical condition and able to stand, stoop, kneel and bend without difficulty and be able to lift and carry at least 50 pounds. Good eyesight, especially depth perception, is necessary for a welder.

By the second week of the term, students will need to purchase the proper PPE (personal protective equipment) required for the term. Required PPE includes: Welding hood, leathers or welding jacket, gauntlet gloves, safety glasses (clear and shade 5), and leather boots (steel toe is preferred).

The AAS Welding is an American Welding Society (<https://www.aws.org>) (AWS) entry-level welding certified program. Successfully completing the AWS portion of each welding course also qualifies the student for a Certificate of Completion from the AWS as an entry-level welder – a nationally recognized certificate.

Graduation Requirements

Students must complete a minimum of 90 credit hours with a cumulative Grade Point Average (GPA) of 2.0 or better. All courses in this program must be completed with a grade of 'C' or better. Twenty-four (24) credits must be completed at Southwestern before the AAS Welding degree is awarded.

Complete the graduation application process one term prior to the term of completion (e.g., spring term graduates must apply during winter term).

Pre-Program Courses

Students are required to take the following courses *prior to* the program courses, depending on students' college placement information. See advisor for details:

Code	Title	Credits
CIS90	Computer Basics (or demonstrate proficiency)	2
WR90R	Academic Literacy (or placement in higher writing course)	4
MTH55	Introductory Technical Mathematics	4

Program Guide

Course	Title	Credits
First Year		
Fall		
DRFT105	Blueprint Reading	3
WLD100	Welding Process I	3
WLD101	Shielded Metal Arc Welding	6
WR115	Introduction to Expository Writing ¹	3
		Credits
		15
Winter		
MTH80	Technical Mathematics I	4
WLD102	Welding Lab A	3
WLD103	Gas Metal Arc Welding	3
WLD104	Flux Forded Arc Welding	3
WLD110	Welding Cert for 1st Year	3
		Credits
		16
Spring		
BA110	Group Dynamics for Teams ²	3
WLD105	Pipe Fitting and Welding I	3
WLD106	Welding Lab B	3
WLD107	Gas Tungsten Arc Welding	3
WLD150	Welding & Joining Processes	3
WLD202	Forklift Operator Training and Cert	1
		Credits
		16
Second Year		
Fall		
CIS120	Concepts of Computing	4
MT101	Machine Tool Processes I	3
WLD201	Pipe Fitting and Welding II	3
WLD4155	Fitting & Fabrication	3
		Credits
		13
Winter		
MFG4102	Mechanical Systems	3
MT102	Machine Tool Processes II	3
PE231	Wellness for Life ³	3
WLD203	Advanced Individual Welding	3
WLD4152	Advanced Pipe Fitting and Fab	3
		Credits
		15
Spring		
WLD205	The Welding Business	3
WLD210	Welding Cert for 2nd Year	3

WLD4153	Pipe Fitting Workshop: Certification	3
	Specific Elective ⁴	3
	Required Program Course - Speech ⁵	3
Credits		15
Total Credits		90

¹ WR121 English Composition or WR121H English Composition w/ Honors may be substituted for WR115 Introduction to Expository Writing.

² BA120 Leadership Development, BA285 Human Relations in Organizations, PSY100 Introduction to Psychology, PSY201 General Psychology, PSY201H General Psychology w/Honors, PSY203 General Psychology, or PSY203H General Psychology w/Honors may be substituted for BA110 Group Dynamics for Teams.

³ HE250 Personal Health or three (3) credits of PE185 sport/activity courses may be substituted for PE231 Wellness for Life.

⁴ Any MFG, MT, WLD, or DRFT course not otherwise included in the degree to meet the requirement.

⁵ Required Program Course - Speech: SP100 Basic Speech Communications, SP111 Fundamentals of Public Speaking, SP218 Interpersonal Communication, or SP219 Small Group Discussion.

Program Student Learning Outcomes

Upon successful completion of this program, the student will be able to:

- Set up and operate manual and semi-automatic welding and cutting equipment used in the metal fabrication industry.
- Perform basic layout and fabrication skills to produce welded metal parts and projects.
- Read and interpret blueprints and American Welding Society standard welding symbols.
- Perform as a team member and practice skills that reflect professional and ethical behavior in the workplace.
- Demonstrate ability to fit, layout, and weld pipe in accordance to industry AWS and API standards.