



Welding

The Welding Program of Study focuses on the development and use of automatic and computer-controlled machines, tools, and robots that perform work on metal or plastic. CTE learners will learn how to modify parts to make or repair machine tools or maintain individual machines and how to use hand-welding or flame-cutting equipment.



Courses for High School Credit

Level 1	Introduction to Welding
Level 2	- Welding I - Entrepreneurship
Level 3	Welding II
Level 4	Practicum in Welding

Aligned Industry-Based Certifications

- AWS D1.1 Structural Steel
- AWS D9.1 Sheet Metal Welding
- API 1104 Welding Pipeline & Related Facilities

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	- Job shadow a welder - Intern for a local welding company
Expanded Learning Opportunities	- Tour a welding shop - Participate in SkillsUSA or TSA - Participate in a welding project that benefits the community



Example Postsecondary Opportunities



Apprenticeships

- Welding

Associate Degrees

- Welding Technology
- Building/Construction Site Management
- Operations Management and Supervision

Bachelor's Degrees

- Welding Technology
- Construction Management
- Project Management
- Building/Construction Site Management

Master's, Doctoral, and Professional Degrees

- Engineering
- Engineering/Industrial Management
- Manufacturing Engineering
- Construction Engineering

Example Aligned Occupations

(Based on statewide employment data)



Welders, Cutters, Solderers, and Brazers

Median Wage: \$48,177
 Annual Openings: 6,792
 10-Year Growth: 23%

First-Line Supervisors of Production and Operating Workers

Median Wage: \$62,584
 Annual Openings: 5,926
 10-Year Growth: 17%

Industrial Production Managers

Median Wage: \$119,691
 Annual Openings: 1,296
 10-Year Growth: 19%





Welding Course Descriptions:

Introduction to Welding- MFG1300 (1 Credit)

Level: 1

Course Fee: \$50

Prerequisites: None

GPA Weight: Regular

Introduction to Welding will introduce welding technology with an emphasis on basic welding laboratory principles and operating procedures. Students will be introduced to the three basic welding processes. Topics include industrial safety and health practices, hand tool and power machine use, measurement, laboratory operating procedures, welding power sources, welding career potentials, and introduction to welding codes and standards. Introduction to Welding will provide students with the knowledge, skills, and technologies required for employment in welding industries. This course supports integration of academic and technical knowledge and skills. Students will reinforce, apply, and transfer knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills will prepare students for future success.

Entrepreneurship- BUS1220 (1 credit)

Level: 2

Course Fee: None

Prerequisites: None

GPA Weight: Regular

Students will learn the principles necessary to begin and operate a business. The primary focus of the course is to help students understand the process of analyzing a business opportunity, preparing a business plan, determining feasibility of an idea using research, and developing a plan to organize and promote the business and its products and services.



Welding I- MFG2200 (2 Credits)

Level: 2

Course Fee: \$75

Prerequisites: None

GPA Weight: Regular

Welding I provide the knowledge, skills, and technologies required for employment in metal technology systems. Students will develop knowledge and skills related to this system and apply them to personal career development. This course supports integration of academic and technical knowledge and skills. Students will reinforce, apply, and transfer knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for future success.

Welding II- MFG3200 (2 Credits)

Level: 3

Course Fee: \$75

GPA Weight: Regular

Prerequisites: Welding I

Welding II builds on the knowledge and skills developed in Welding I. Students will develop advanced welding concepts and skills as related to personal and career development. Students will integrate academic and technical knowledge and skills. Students will have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems.

Practicum in Welding- MFG4300 (2 Credits)

Level: 4

Course Fee: \$75

Prerequisites: Two credits from the Program of Study

GPA Weight: Regular

The Practicum in Welding course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

