

WELDING TECHNOLOGIES 48.0508.00

Program Description, Industry Credential, Coherent Sequence, and Teacher Certification

PROGRAM DESCRIPTION

The **Welding Technologies** program prepares students to acquire welding techniques and be product verified with weldment testing. They will develop a working knowledge of blueprint reading, and the welding processes for Shielded Metal ARC Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Cored ARC Welding (FCAW), and Gas Tungsten ARC Welding (GTAW) with the use of thermal cutting equipment. Students will learn about the tools and equipment for the welding trade.

The **Welding Technologies** program is delivered as a 2-year coherent sequence of courses designed to offer students knowledge and skills that meet the need of today's workforce. Students experience pedagogy in technical instruction, academic foundations, experiential learning, work-based learning, leadership, and personal development. The Professional Skills developed by business and industry leaders across Arizona are integrated throughout the **Welding Technologies** program. Students learn how to get along with their team members, to make critical decisions, to solve problems, to develop respect, and to be successful in their chosen occupation. Students also develop leadership, social, civic, and career skills through their participation in the state-recognized Career and Technical Student Organization, SkillsUSA.

The **Welding Technologies** instructional program prepares students for entry-level employment, further training, and/or post-secondary education for these and other occupations: Construction Welder, Shipyard Welder, Metal Cutters, Automated Welder Operators, Structural Iron and Steel Worker, Pipefitter, Boilermakers, Aerospace, Agriculture, Automotive, Chemical Processing, and Manufacturing

INDUSTRY CERTIFICATIONS

The following credentials have been approved for the A-F CCR and are CTED eligible for the **Welding Technologies** instructional program:

- American Welding Society (AWS) D1.1 SMAW
- American Welding Society (AWS) D7.1 GTAW
- American Welding Society (AWS) FCAW
- American Welding Society (AWS) GMAW
- American Welding Society (AWS) SAW 1G
- American Welding Society (AWS) SAW 2G
- American Welding Society (AWS) SAW 3G
- American Welding Society (AWS) SAW 4G
- Autodesk Certified User (ACU) - 3Ds Max
- Autodesk Certified User (ACU) - Maya
- Certified SolidWorks Associate (CSWA)
- Certified SolidWorks Professional (CSWP)
- Manufacturing Skill Standards Council (MSSC)
- Mastercam Associate
- Mechatronics
- National Center for Construction Education and Research (NCCER) - Core

CTE Handbook (updated Spring 2019)

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- National Center for Construction Education and Research (NCCER) - Sheet Metal
- National Center for Construction Education and Research (NCCER) – Welding Level 1
- National Center for Construction Education and Research (NCCER) – Welding Level 2
- National Coalition of Certification Centers (NC3) - Precision Measuring
- National Institute for Metalworking Skills (NIMS)
- OSHA 10 - Construction Industry

COHERENT SEQUENCE

48.0508.10 - Welding Technologies I, **and**

48.0508.20 - Welding Technologies II, **and program may elect to add:**

48.0508.25 - Welding Technologies III, **or**

48.0508.40 - Welding Technologies IV, **or**

48.0508.70 - Welding Technologies – DCE (Diversified Cooperative Education) **or**

48.0508.75 - Welding Technologies - Internship **or**

48.0508.80 - Welding Technologies – Cooperative Education

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TEACHER CERTIFICATION REQUIREMENTS

CAREER PREPARATION: The instructor must be ADE/CTE certified according to the following Certificates, PCTIET, SCTIET, and SSCTEIT

Note:

- Welding Technologies 48.0508.70 may be a part of the sequence and the teacher must hold a Cooperative Education Endorsement (CEN).
- Teacher/Coordinator, 48.0508.75 is not required to have a Cooperative Education Endorsement (CEN).
- Teacher/Coordinator, 48.0508.80 is required to have a Cooperative Education Endorsement (CEN).

CERTIFICATE TYPES

PCTIET Provisional Career and Technical Education Industrial and Emerging Technologies
SCTIET Standard Career and Technical Education Industrial and Emerging Technologies
SSCTEIT Standard Specialized Career and Technical Education Industrial and Emerging Technologies