

Program Name	Welding Technologies
Program CIP Code	48.0508.00
Program Description and Coherent Sequence	<p>The Welding Technologies program is designed to prepare students for employment in the welding industry. The curriculum provides individuals with critical thinking, career development, life management, business, economic and leadership skills required for Welding Technologies occupations. Welding Technologies prepares individuals to apply technical knowledge and skills to join or cut metal surfaces. Includes instruction in arc welding, resistance welding, brazing and soldering, cutting, high-energy beam welding and cutting, solid state welding, ferrous and non-ferrous materials, oxidation-reduction reactions, welding metallurgy, welding processes and heat treating, structural design, safety, and applicable codes and standards. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization SkillsUSA.</p> <p>Welding Technologies Core Curriculum: Instruction includes career planning, preparing for employment, work-based learning, oral and written communication skills, understanding the role of small businesses and financial management, workplace leadership styles and leadership development.</p> <p>Welding Technologies: Prepares individuals to apply basic technical knowledge and skills to join or cut metal surfaces. Includes instruction in blueprint reading, arc welding, brazing soldering, cutting, safety, and applicable codes and standards.</p> <p>Work-based learning: Students have the opportunity to participate in either a Welding Technologies Cooperative Education experience or an Internship.</p>
Industry Validated Standards	http://www.azed.gov/career-technical-education/files/2016/06/technical-standards-welding-technologies-48050800.pdf
Specialized Equipment	Anvil, 100 lbs. Apron, welding Arrestor, flashback Bench, work, heavy duty Brake, power Broom, floor Brush, dust Brush, wire Brush, stainless, tooth

	<p>Cabinet, storage fire proof Caliper, slide Can, rag, fire proof Cap, hard hat Cape Sleeve Chisels, set, cold 1/4" to 3/4" Clamp, Chain Clamp, Ground Clamp, Vise Grip Clamp, Welding Clamps, Bar, various lengths Clamps, C 6" 8" 10" Compressor- air →12 horse power →50 gal. capacity Compressor, hose Compressor →NozzleCooler →Water →GTAW Bench type Welding inspection gauges Welding machine FCAW/CV Welding machine GMAW Welding machine GTAW Welding machine SMAW Wire FCAW Wire feeders Wire GMAW Wrench adjustable Wrench</p> <p>Full Equipment List can be accessed here: http://www.azed.gov/career-technical-education/files/2011/11/equipment-list-welding-technologies-48050800.pdf</p>
Industry Recognized Certifications	<ul style="list-style-type: none"> • AWSC American Welding Society Certification • Certified Welder (AWSJ) SENSE • NCCER Sheet Metal - Level 1, 2 • NCCER Welder - Level 1, 2 • Eastern Arizona College <ul style="list-style-type: none"> ○ Welding Technology - Certificate of Proficiency
CTE End-Of- Program (EOP) Technical Skill Assessment (TSA) Y/N	Y
Current EOP TSA Pass Score	60%
Participation in JTED Program	<ul style="list-style-type: none"> • Welding Fabricator

**Qualifies Students for These
Employment Opportunities**

- Pipe Welder
- Structural Welder
- Industrial Welder
- Rig Welder

DRAFT

SB1525 JTED Course and Program Requirements

<p>Requires students obtain passing score of 60% on assessment 15-391(3)(b) Page 1/20-24 & 15-391(5)(b) Page 2/1-6</p>	<p>Welding Technologies Technical Skill Assessment requires a passing score of 60%.</p>
<p>Not a Course Required under Minimum Course of Study including Honors 15-391(3)(d) Page 1/27-29</p>	<p>Not required for graduation.</p>
<p>Majority of Instructional Time in Lab / Field / Work Based Learning Environment 15-391 (3)(e) Page 1/30-32 and Requires CTSO Participation 15-391(5)(d) Page 2/10-13</p>	<p>Yes, students spend over 60% of their time welding and practicing different types of industry processes of welding in Metal Inert Gas Welding, Tungsten Inert Gas Welding, Stick Welding, Oxy Acetylene Gas Welding and Cutting.</p> <p>SkillsUSA</p>
<p>Demonstrated Need for Extra Funding for a course 15-391 (3)(f) Page 1/33-34</p>	<p>Yes, this program demonstrates the need for extra funding due to the technology advancements and the ever-changing equipment needs. Because technology is continuously changing and advancing, quality welding training will always be an ongoing process requiring regular updates so that today's welders will be able to meet the challenges of tomorrow.</p>
<p>Specialized Equipment Exceeds Cost of Standard Course 15-391(3)(g) Page 1/35-36 and 15-391(5)(c) Page 2/7-9</p>	<p>Welder FCAW Welder GTAW Tip drill Tip-nipper Tip Scarfig, welder GMAW Welder FCAW Welder GTAW Tip Welding and heating tongs Pickup Tool cart Torch Oxyacetylene Torch Tig Water cooled Vacuum Wet/dry VCR with television monitor Vise Bench type Welding inspection gauges Welding machine FCAW/CV Welding machine GMAW Welding machine GTAW Welding machine SMAW Wire FCAW Wire feeders Wire</p> <p>Equipment list can be accessed here: http://www.azed.gov/career-technical-education/files/2011/11/equipment-list-welding-technologies-48050800.pdf</p>

<p>Alignment through Curriculum, Instructional Model and Courses Sequence 15-391(5)(e) Page 2/15-18</p>	<p>Yes, state-established course sequence for Welding Technologies consists of a minimum of 2 Carnegie Units of Instruction.</p>
<p>Defined Pathway to Career and Postsecondary Ed in Specific Vocation or Industry 15-391(5)(f) Page 2/19-21</p>	<p>Yes, leads to careers in Welding, Fabrication and Apprenticeships.</p> <ul style="list-style-type: none"> • Welding Fabricator • Pipe Welder • Structural Welder • Industrial Welder • Rig Welder
<p>Fills High Need Vocation or Industry as Determined by CTE/ADE 15-391(5)(j) Page 2/30-31</p>	<p>Yes, the Welding Technologies program is ranked #23 on the 2017 CTE Program List. Ranking is based on “high demand, high wage, high skill” occupations as determined by Arizona Labor Market Data from the AZ Office of Employment and Population Statistics.</p>
<p>Requires a Single or Stackable Credential or a Skill that allows a student to obtain work 15-391(5)(k) Page 2/32-35</p>	<p>Yes, Welding certifications earned during the program lead towards many other certifications and credential when hours and performance measures are met; students develop skills that would allow them to enter an apprenticeship program and job opportunities.</p>
<p>Leads to certification or licensure verified by that vocation or industry that qualifies student for employment which the student would not otherwise qualify. 15-391(5)(l) Page 2/36-39</p>	<p>Program must offer one or more of the following certifications:</p> <ul style="list-style-type: none"> • AWSC American Welding Society Certification • Certified Welder (AWSJ) SENSE • NCCER Sheet Metal - Level 1 and 2 • NCCER Welder - Level 1, 2 • Welding Technology - Certificate of Proficiency (Eastern Arizona College)
<p>If no certification or licensure is accepted by vocation or industry, completion of program must qualify student for employment for which student would not otherwise qualify without completing JTED program. 15-391(5)(l) Page 2/39-43</p>	<p>N/A</p>

<p>Requires instruction and instructional materials substantially different from and exceed scope of standard instruction and include skills, competencies and knowledge to be successful in JTED program vocation or industry. 15-391(5)(m) Page 2/44-45 and 3/1-3</p>	<p>Yes, this specialized program requires tools and equipment utilized in the welding field that exceeds a standard classroom.</p>
<p>Industry provided financial or technical support. 15-391(5)(n) Page 3/4-8</p>	<p>Welding industry representatives and CEOs are on advisory councils and provide technical support to programs.</p>
<p>Demonstrated need for extra funding in order to provide JTED program 15-391(5)(o) Page 3/9-11</p>	<p>Yes, this program demonstrates the need for extra funding due to the extra equipment required, i.e. Welding Fabrication is continually using different alloys in today's world. This requires different welding processes in order to fabricate and repair equipment. There are hundreds of different processes that have been developed to bring steel, aluminum, mild steel, tool steel, stainless steel and materials together.</p>

Eligibility		Yes	No
JTED	The Welding Technologies program meets the requirements for JTED compliance and eligibility	x	
CTE Federal Perkins and State Priority	The Welding Technologies program meets the requirements for Perkins and is eligible to generate CTE State Priority funding .	x	