

## CTE Course Description and Standards Crosswalk

### Course Information

Course Name	Welding Technology Services Part 2 Semester 1
Course Number	86321
Number of High School Credits	1
Sequence or CTEPS (You must first have the Sequence or CTEPS entered into the EED-CTE system.)	Welder
Date of district Course Revision	September 2014

### Career & Technical Student Organization (CTSO)

CTSO embedded in this sequence	Skills USA
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### Occupational Standards

Source of Occupational Standards	American Welding Society (AWS)
Names/Numbers of Occupational Standards	Certified Welder - AWS

### Registration Information

Course Description (brief paragraph – as shown in your student handbook or course list)	Welding Part 2 covers welding safety and health, tools and equipment; continuation and advanced SMAW, GMAW, GTAW, OAW processes; introduction to FCAW (Flux Cored Arc Welding), advanced cutting processes, blueprinting and metallurgy; employability and career information explored; computer design and cutting techniques; and continued preparation for the AWS (American Welding Society) Level 1 certification.
Instructional Topic Headings (please separate each heading by a semi-colon)	Overall Welding Safety; Tools, Equipment and Repair; Advanced Base and Filler Metal Identification and Selection; Advanced (Continued ) OAW Welding Process and Variables; Advanced SMAW Welding Process and Variables; Advanced GMAW Welding Process and Variables; Advanced GTAW Welding Process and Variables; Advanced Cutting Processes; Advanced Cutting Processes; Basic FCAW Processes; Computer Design and Cutting; Advanced Blueprint Reading and Metallurgy; Career Employability Information; Encourage Career and Technical Student Organizations (CTSO)—SkillsUSA; AWS Entry

### Summative Assessments and Standards

Technical Skills Assessment (TSA)	Yes
Course addresses:	Welding Level 1 – Base Metal Preparation Module 29103-03, Joint Fit-up and Alignment – Module 29109-03, Oxyfuel cutting – Module 29102-03, SNAW – Beads and Fillet Welds – Module 29107-03, Electrodes and Selection – Module 29106-03, Equipment and Setup – Module 29105-03, Groove Welds with Backing – Module 29108-03, SMAW – Open V-Groove Welds – Module 29110-03, SMAW – Open-Root Pipe Welds – Module 29111-03, Weld Quality – Module 29104-03, Welding Safety – Module 29101-03,
New Alaska ELA and Math Standards	Yes
Alaska Cultural Standards	Yes

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All Aspects of Industry (AAI)	Yes
Core Technical Standards	Yes
Employability Standards	Yes
<b>Employability Standards</b>	
Source of Employability Standards	State Of Alaska
<b>Tech Prep</b>	
Current Tech Prep Articulation Agreement? (Y/N)	Yes (Combined with Welding 1)
Date of Current Agreement	May 15, 2013
Postsecondary Institution Name	University of Alaska Anchorage
Postsecondary Course Name	Shield Metal Arc Welding & Gas Metal Arc Welding
Postsecondary Course Number	WELD A112 & WELD A161
# of Postsecondary Credits	8

### Additional CTE Course Information

Author	
Course developed by	Gilbert Campbell, Bryan Kirby, Ben Parker, Dan Trotter
Course adapted from	MSBSD Previous Welding Course
Date of previous course revision	2007
Course Delivery Model	
Is the course brokered through another institution or agency? (Y/N)	No

Standards Alignment
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Student Performance Standards (Learner Outcomes or Knowledge & Skill Statements)	Specific Occupational Skills Standard	Common Technical Core Standards	New Alaska ENG/LA Standards	New Alaska Math Standards	Alaska Cultural Standards	Employability / Career Readiness Standards	All Aspects of Industry/ Systems	Assessment
Understand and demonstrate safe welding procedures.	AWS Ex 1.2.1	MN3 MN-HSE 1,2 CRP 1, 2, 3, 5, 8, 9	RI 11-12 1 -4, RST 11-12 1-3; 7		A1  B2, B4	A2, A5, A6	Health/Safety	State of AK DEED Safety test
Utilize safe and efficient use of tools/equipment.	AWS Ad 1.6.4	MN3 MN-HSE1-7 MNPPD 3 MN-PPD 5 MN-MIR 1-7 CRP 1, 2, 3, 5, 8, 9	RI 11-12 1 -4, RST 11-12 1-3; 7	N-VM8	A1  B2, B4	A2, A5, A6	Health/Safety Technical Skills	Certified Welder Exam through AWS  Student has to demo and explain safe use

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Develop proficiency in advanced OAW, SMAW, GTAW, GMAW processes.	AWS 1.3.7	MN-PPD 1-5 CRP 2, 3, 6, 8, 9, 10	RST 11-12.1-3, 7, 9	G-SRT.8 GMD.1,3.4	B2, B4	A2, A5	Technical Skills	Certified Welder Exam through AWS  Produce quality weld or cut from weld schedule. Written test
Describe and discuss basic FCAW-G processes.	AWS 1.3.2	MN-PPD 1-5 CRP 2, 3, 6, 8, 9, 10	RST 11-12.1-3, 7, 9	G-MG1.2,3	B2, B4	A2, A5	Technical Skills	Certified Welder Exam through AWS  Produce quality weld from weld schedule. Written test
Students will instruct welding employment opportunities in Alaska.	AWS NCDG 2.06H, 3.09D	MN 4 CRP2,3,6,8, 9,10	W 11-12.4, 5, 6 SL 9-10. 4-5, L 11-12. 1-3, 6		A1 B2, B4	A2, A3, A5, B1, B2, B3, B4, B5	Planning Community Labor	Resume and electronic portfolio creation from AKCIS

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Diagram structural steel plans for vertical construction.	AWS Ex 1.1.7d	STET 4 CRP2,7,11	RST 9-10.7 RST11-12.1-4 RST11-12.7-9		B2, B4	A2, A5	Technical Skills	Certified Welder Exam through AWS  Written Test  Project from blueprint
Utilize cnc technology for cutting techniques.	AWS 1.3.2	MN-PPD 1-5 CRP 2, 3, 6, 8, 9, 10	RST11-12.3,4,7-9		B2, B4	A2, A5	Technical Skills	Certified Welder Exam through AWS  Design and create project.
Prepare and participate in community activities for SkillsUSA technical leadership competition.		MN-PPD-5  MN 6  CRP 1 - 12	RST 11-12.1-4, 7-9 W 11-12.4, 5, 6 SL 9-10. 4-5, L 11-12. 1-3, 6 RST 9-10.3-5, 8 W 11-	N-VM8  GMD.1,3.4  G-MG1.2,3	A1  B2, B4	A2, A3, A5, B1, B2, B3, B4, B5	Work Habits Planning Community	Participation in Student Performance Conference.  SkillsUSA Assessment Test

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			12.4, 5, 6 SL 9-10. 4-5, L 11-12. 1-3, 6					
Demonstrate adequate competency to attempt AWS welding certification test.	AWS Ad 1/2J	CRP 1,2,8,10,11	RST 11-12.1-4, 7-9 W 11-12.4, 5, 6 SL 9-10. 4-5, L 11-12. 1-3, 6 RST 9-10.3-5, 8		B2, B4	A2, A5	Technical Skills	Certified Welder Exam through AWS  Hands-On Performance Test

**Instructional Resources**

**List the major instructional resources used for this course: (websites, textbooks, essential equipment, reference materials, supplies)**

**Recommended Text:** Welding Technology, Bowditch, Goodheart-Willcox, 1997.

**Resources:**

**American Welding Society AWS D1.1 Structural Welding Code**

**American Petroleum Institute API 1104**

Hobart Institute of Welding Technology Training Workbooks, SMAW, GTAW, GMAW, OAW, FCAW, 1997, [www.welding.org](http://www.welding.org)