Pennsylvania CTE

48.0508 Welding Technology/Welder

Occupational Orientation and Safety 100	**101** Prepare and mark time or job sheet, reports or records. 101
	102 Perform housekeeping duties daily. 102
	103 Follow verbal instructions to complete work assignments and rules. 103
	104 Follow written instructions to complete work assignments and rules. 104
	105 Demonstrate proper use and inspection of Personal Protection Equipment (PPE). 105
	106 Demonstrate proper work area operation. 106
	107 Demonstrate proper use of ventilation equipment. 107
	108 Discuss proper Hot Zone operation. 108
	109 Demonstrate knowledge of proper work actions for working in confined spaces. 109
	110 Demonstrate knowledge of SDS sheets and precautionary labeling. 110
	111 Demonstrate proper use and inspection of equipment used for each required welding and thermal cutting process. 111
	112 Display familiarity with industrial and OSHA safety standards. 112
	113 Demonstrate knowledge of oxyfuel safety procedures. 113
	114 Demonstrate knowledge of arc welding safety procedures. 114
	115 Demonstrate emergency action plan (all inclusive). 115
Principles of Welding 200	**201** Identify major types of metals (ferrous and nonferrous) used in welding. 201
	202 Describe the basic principles of heat, expansion and contraction as it relates to metals. 202

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	203 Select appropriate welding technique, equipment and supplies for a given metal or process. 203
	204 Describe the industry accepted welding codes, standards and procedures and their use. 204
	205 Identify various joint designs (joint geometry). 205
	206 Clean and prepare materials for welding and/or cutting. 206
	207 Demonstrate proper use of hand tools. 207
	208 Demonstrate proper use of standard measuring and layout tools. 208
	209 Demonstrate proper use of power equipment. 209
Welding, Drawing, and Weld Symbol Interpretation 300	**301** Interpret basic elements of a drawing or sketch. 301
	302 Interpret welding symbol information. 302
	303 Fabricate parts from a drawing or sketch (class project). 303
	304 Identify structural metals used in the metal fabrication field. 304
	305 Demonstrate knowledge of basic metric conversion. 305
Visual Examination, Inspection, and Testing 400	**401** Evaluate cut surfaces and edges of prepared base metal parts for testing. 401
	402 Identify and evaluate weld discontinuities as per accept/reject criteria. 402
	403 Demonstrate visual inspection and destructive and non destructive techniques. 403
Shielded Metal Arc Welding (SMAW) 500	**501** Perform safety inspections of SMAW equipment and accessories. 501
	502 Make minor external repairs to SMAW equipment and accessories. 502
	503 Set up and operate SMAW equipment. 503
	504 Make fillet welds in all positions. 504
	505 Make groove welds in all positions. 505
	506 Pass performance test in all positions. 506
	507 Perform qualification test. 507
Ga Skip to main content **(Gl**	**Perform safety inspections of GMAW equipment and accessories.** 601

	602 Make minor external repairs to GMAW equipment and accessories. 602
	603 Set up and operate GMAW equipment. 603
	604 Make fillet welds in all positions. 604
	605 Make groove welds in all positions. 605
	606 Pass performance test. 606
Flux Corded Arc Welding (FCAW) 700	**701** Perform safety inspections of Flux Cored Arc equipment and accessories. 701
	702 Make minor external repairs to Flux Cored Arc equipment and accessories. 702
	703 Set up and operate FCAW equipment. 703
	704 Make fillet welds in all positions. 704
	705 Pass performance test. 705
	706 Demonstrate a groove weld in all positions. 706
Gas Tungston Arc Welding (GTAW) 800	**801** Perform safety inspections of GTAW equipment and accessories. 801
	802 Make minor external repairs to GTAW equipment and accessories. 802
	803 Set up and operate GTAW equipment. 803
	804 Make fillet welds, in all positions, on ferrous materials. 804
	805 Pass performance test on ferrous materials. 805
	806 Set up and operate GTAW on nonferrous materials. 806
	807 Make fillet welds on nonferrous materials. 807
	808 Pass performance test on nonferrous materials. 808
Manual Oxyfuel Gas Cutting (OFC) 900	**901** Perform safety inspections of OFC equipment and accessories. 901
	902 Make minor external repairs to OFC equipment and accessories. 902
	903 Set up for manual OFC operations on steel. 903
	904 Operate manual OFC equipment. 904
	905 Perform straight cutting operations on steel. 905
	906 Perform shape cutting operations on steel. 906

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	907 Perform bevel cutting operations on steel. 907
	908 Perform piercing operations on steel. 908
Mechanized Oxyfuel Gas Cutting (OFC) 1000	**1001** Perform safety inspections of mechanized OFC equipment and accessories. 1001
	1002 Make minor external repairs to mechanized OFC equipment and accessories. 1002
	1003 Set up and operate OFC equipment on steel. 1003
	1004 Perform straight cutting operations on steel. 1004
	1005 Perform bevel cutting operations on steel. 1005
Manual Plasma Arc Cutting (PAC) 1100	**1101** Perform safety inspections of PAC equipment and accessories. 1101
	1102 Make minor external repairs to PAC equipment and accessories. 1102
	1103 Set up and operate manual PAC operations on ferrous and nonferrous materials. 1103
	1104 Perform shape cutting operations on ferrous and nonferrous materials. 1104
Manual Air Carbon Arc Cutting (CAC-A) 1200	**1201** Perform safety inspections of CAC-A equipment and accessories. 1201
	1202 Make minor external repairs to CAC-A equipment and accessories. 1202
	1203 Set up and operate manual CAC-A gouging and cutting operations on steel. 1203
	1204 Perform gouging and scarfing operations, to remove base and weld metal, on steel. 1204
Brazing and Soldering 1300	**1301** Set up and operate silver oxyfuel brazing and silver soldering equipment. 1301
	1302 Perform brazing and silver soldering operations. 1302