WELDING TECHNOLOGY II

MIS03 17237

Prerequisite: Welding Technology I - 17236

Welding Technology II provides advanced training in the various welding applications in preparation for college welding programs or entering employment. The course will adhere to American Welding Society standards in welding processes. Continued emphasis will be placed on applied academics, professional development, leadership, and organizational skills.

Credit 2 credit

Level Grades 11-12

Standards labeled as CORE are those parts of the S.E.N.S.E program that must be assessed in order to obtain student credentials. The other standards are assessed on a selection process for credential purposes. See S.E.N.S.E guidelines for more details.

Standard 1	***WELDING BASIC ORIENTATION***	
Topic 1.1	**Occupational Orientation***CORE*****	
	Student Competencies	
	1.1.3	Follows detailed verbal instructions given by an immediate supervisor to set up and carry out specific assignments.
	1.1.4	Follows detailed written instructions given by an immediate supervisor to set up and carry out specific assignments.
Topic 1.3	**Drawing and Welding Symbol Interpretation***CORE*****	
	Student Competencies	
	1.3.3	Fabricates parts from a drawing or sketch.
Topic 1.4	**Welding Inspection and Testing***CORE*****	
	Student Competencies	
	1.4.1	Examines cut surfaces and edges of prepared base metal parts.
	1.4.2	Examines tacks, root passes, intermediate layers, and completed welds.

Standard 2		***WELDING TYPES AND OPERATIONS***
Topic 2.1	**Shielded Metal Arc Welding (SMAW)**	
	Student Competencies	
	2.1.5	Makes fillet welds, in all positions, on carbon steel.
	2.1.6	Makes groove welds, in all positions, on carbon steel.
	2.1.7	Passes SMAW welder performance qualification test (2G and 3G, uphill, limited thickness test plates) on carbon steel.
Topic 2.2	**Gas Metal Arc Welding (GMAW-S, GMAW spray transfer)**	
	Student Competencies	
		Short Circuiting Transfer
	2.2.5	Makes fillet welds, in all positions, on carbon steel.
	2.2.6	Makes groove welds, in all positions, on carbon steel.
	2.2.7	Passes GMAW-S workmanship qualification test on carbon steel.
		Spray Transfer
	2.2.8	Sets up for GMAW (spray) operations on carbon steel.
	2.2.9	Operates GMAW (spray) equipment on carbon steel.
	2.2.10	Makes fillet welds in the1F and 2F positions on carbon steel.
	2.2.11	Makes groove welds in the1G position on carbon steel.
	2.2.12	Passes GMAW (spray) workmanship qualification test on carbon steel.
Topic 2.3	**Flux Cored Arc Welding (FCAW-G/GM, FCAW-S)**	
	Student Competencies	
		Gas Shielded
	2.3.5	Makes fillet welds, in all positions, on carbon steel.
	2.3.6	Makes groove welds, in all positions, on carbon steel.
	2.3.7	Passes FCAW-G/GM welder performance qualification test on carbon steel.
		Self-Shielded
	2.3.10	Makes fillet welds in all positions on carbon steel.
	2.3.11	Makes groove welds in all positions on carbon steel.
	2.3.12	Passes FCAW-S welder performance qualification test on carbon steel.
Topic 2.4	**Gas Tungsten Arc Welding (GTAW)**	
	Student Competencies	
		Carbon Steel
	2.4.5	Makes fillet welds, in all positions, on carbon steel.
	2.4.6	Makes groove welds, in all positions, on carbon steel.
	2.4.7	Passes GTAW welder performance qualification test on carbon steel.

		Austenitic Stainless Steel
	2.4.8	Sets up for GTAW operations on austenitic stainless steel.
	2.4.9	Operates GTAW equipment on austenitic stainless steel.
	2.4.10	Makes fillet welds in the 1F, 2F, and 3F positions, on austenitic stainless steel.
	2.4.11	Makes groove welds in the1G and 2G positions, on austenitic stainless steel.
	2.4.12	Passes GTAW workmanship qualification test on austenitic stainless steel.
		Aluminum
	2.4.13	Sets up for GTAW operations on aluminum.
	2.4.14	Operates GTAW equipment on aluminum.
	2.4.15	Makes fillet welds in the 1F and 2F positions, on aluminum.
	2.4.16	Makes groove welds in the 1G position, on aluminum.
	2.4.17	Passes GTAW workmanship qualification test on aluminum.
Standard 3	***THERMAL CUTTING PROCESSES***	
Topic 3.1	**Manual Oxyfuel Gas Cutting (OFC)***CORE*****	
	Student Competencies	
	3.1.8	Performs scarfing and gouging operations to remove base and weld metal, in the flat and horizontal positions, on carbon steel.
Topic 3.2	**Mechanized Oxyfuel Gas Cutting (OFC) [e.g., Track Burner]***CORE*****	
	Student Competencies	
	3.2.1	Performs safety inspections of mechanized OFC equipment and accessories.
	3.2.2	Makes minor external repairs to mechanized OFC equipment and accessories.
	3.2.3	Sets up for mechanized OFC operations on carbon steel.
	3.2.4	Operates mechanized OFC equipment on carbon steel.
	3.2.5	Performs straight, square edge cutting operations in the flat position, on carbon steel.
	3.2.6	Performs straight, bevel edge cutting operations in the flat position, on carbon steel.
Topic 3.4	**Manual Air Carbon Arc Cutting (CAC-A)***CORE*****	
	Student Competencies	
	3.4.1	Performs safety inspections of manual CAC-A equipment and accessories.
	3.4.2	Makes minor external repairs to manual CAC-A equipment and accessories.
	3.4.3	Sets up for manual CAC-A scarfing and gouging operations on carbon steel.
	3.4.4	Operates manual CAC-A equipment on carbon steel.
	3.4.5	Performs scarfing and gouging operations to remove base and weld metal, in the flat and horizontal positions, on carbon steel.