Kentucky CTE

Advanced Manufacturing: Welding Technology: Shielded Metal Arc Welding (SMAW) and Lab 480521 (2026–2027)

Practice and perform safe shop procedures at all times. 1	1 Practice and perform safe shop procedures at all times. 1
Apply the technical math required for employment opportunities in welding. 2	2 Apply the technical math required for employment opportunities in welding. 2
Perform all duties with integrity, responsibility, quality, discipline and teamwork. 3	3 Perform all duties with integrity, responsibility, quality, discipline and teamwork. 3
Identify, select, and store SMAW electrodes. 4	4 Identify, select, and store SMAW electrodes. 4
Apply principles of the SMAW process to cut and weld metals. 5	5 Apply principles of the SMAW process to cut and weld metals. 5
Apply the knowledge of the effects of variables on the SMAW process to weld plates and pipes. 6	6 Apply the knowledge of the effects of variables on the SMAW process to weld plates and pipes. 6
Apply the knowledge of ba co ph	7 Apply the knowledge of basic metallurgy to control the chemical, physical, and mechanical properties of carbon steel. 7

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mechanical properties of carbon steel. 7	
Use shop equipment and tools. 8	8 Use shop equipment and tools. 8
Additional content is optional for all pathways but must be taught for students in Welding TRACK CIP 48.0508.99	1 Interpret and apply tolerances. 1
	2 Interpret and apply American Welding Society welding symbols. 2
	3 Draw shop sketches. 3
	4 Read and interpret blueprints. 4
	5 Interpret lines. 5
	6 Interpret views to include AWS (ISO symbols optional). 6
	7 Interpret conventional and datum line dimensions. 7
	8 Interpret and apply tolerances. 8
	9 Interpret sectioning and section lines. 9
	10 Apply principles of oxy-fuel systems to cut, weld, braze, and braze-weld with oxy-fuel. 10
	11 Apply principles of controlling distortion. 11
	12 Set up components of oxy-fuel equipment and set up procedures. 12
	13 Apply oxyfuel-cutting applications and procedures. 13
	14 Apply oxy-fuel welding applications and procedures. 14
	15 Apply brazing and braze welding principles and applications. 15