

CURRICULUM MAP
Cluster: Architecture and Construction
CTE Program of Study: MA1870 Industrial Equipment Maintenance

STANDARD	%	SKILL SET/COMPETENCY	REQUIRED CORE COURSES FOR COMPLETION			
			1 st Course 1873 Fundamentals of Industrial Equipment Maintenance	2 nd Course 1875 Hydraulic and Pneumatic Systems	3 rd Course 1871 Electrical Maintenance	4 th Course 1985 Fundamentals of Welding Technology
Machinery and Equipment	16%	Disassemble, repair, and reassemble machinery/equipment	X			
		Maintain operating condition and perform preventive maintenance of the machinery/equipment	X			
		Identify and troubleshoot component defects and malfunctions	X			
		Test operation of newly repaired machinery/equipment	X			
		Analyze test results, machine error messages, and information from operators in order to diagnose machinery/equipment problems	X			
		Maintain record of repairs and maintenance performed	X			
Tools and Safety	14%	Select and differentiate appropriate use of various hand tools	X			
		Demonstrate appropriate care of hand tools	X			
		Identify and safely use large machine tools, including lathes, mills, hoists, rigging equipment, and presses	X			
		Identify safe use of ladders and scaffolding	X			
		Demonstrate understanding of lock-out/tag-out procedures	X			
		Exhibit understanding of shop safety	X			

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Electronics and Electrical Principles	13%	Apply basic electrical principles			X	
		Demonstrate knowledge of basic CNC operations			X	
		Demonstrate knowledge of basic programmable logic controllers (PLCs)			X	
		Exhibit basic knowledge of electrical symbols			X	
Hydraulics and Pneumatics	14%	Interpret basic hydraulic and pneumatic symbols		X		
		Apply knowledge of hydraulic and pneumatic components		X		
		Interpret hydraulic and pneumatic principles		X		
Motors and Motor Controls	14%	Apply basic electrical principles of motors			X	
		Interpret appropriate applications for types of motors (linear, servo, AC induction, DC motors and transformers)			X	
		Select appropriate applications for frequency drives			X	
		Identify motor components			X	
Mechanism Drives	10%	Apply principles of mechanisms				X
		Identify appropriate applications of various gears and drives				X
		Demonstrate knowledge of appropriate set-up procedures				X
		Apply principles of mechanics				X
Industrial Robotics Systems	8%	Interpret appropriate industrial robotic functions and applications				X
		Interpret basic robotic programming, including CADD				X

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		Identify various industrial robotic design features				X
Blueprints and Schematics	11%	Interpret various lines	X			
		Exhibit knowledge of legends	X			
		Interpret blueprint and schematic components	X			
		Interpret title block information	X			
		Demonstrate knowledge of views, angles, and tolerances	X			