



Skilled Trades Related Technical Instruction (RTI)/ Apprenticeship Program

Designed by Manufacturers to Meet the Needs of Jackson, Hillsdale, & Lenawee County Manufacturers

Apprentice Course Matrix

	Course Title	Tool & Die Maker	CNC Machinist	Machine Builder	Machine Repair	Industrial Maintenance Mechanic	Industrial Electrician	Welding	Mold Maker	CNC Certificate	Machine Maintenance Certificate	Screw Machine Certificate	Welding Certificate
Core Curriculum	Industrial Blueprint Reading	X	X	X	X	X	X	X	X	X		X	X
	Introduction to CAD	X	X	X	X	X	X	X	X				
	Basic Math	X	X	X	X	X	X	X	X				
	Pre-Algebra	X	X	X	X	X	X	X	X				
	Introductory Algebra	X	X	X	X	X	X	X	X				
	Machining Theory & Methods	X	X	X	X	X		X	X	X			
	Basic Gauges & Measurement	X	X	X	X	X		X	X	X	X	X	
	Materials/Metallurgy	X	X	X	X	X		X	X				X
	Basic Industrial Electricity	X	X	X	X	X	X	X	X		X		
	Problem Solving	X	X	X	X	X	X	X	X				
	Intro to Lean Theory	X	X	X	X	X	X	X	X				
	Safety & First Aid	X	X	X	X	X	X	X	X				
	Basic Computer Skills	X	X	X	X	X	X	X	X				
	Work/Life Skills: • Communication (Written & Verbal) • Team Building • Work Ethic	X	X	X	X	X	X	X	X				
	Int. Blueprint Reading/GD&T	X	X	X	X			X	X				
Trigonometry	X	X				X	X	X					
Geometry	E	E	X		X								
Precision Machining Methods	X	X	X	X	X			X	X				
Industrial Hydraulics/Pneumatics	X	X	X	X	X	X		X		X			
Welding I	X	X	X	X	X		X	X				X	
Welding II					X		X					X	
Welding III							X					X	
Moldmaking	X							X					
Jig & Fixture Design	X	X	X	X			X	X					
Die Theory & Design	X							X					
CNC Theory & Operation	X	X						X	X				
CNC Programming	X	X						X	X				
EDM Theory	X	X						X					
Machine Maintenance & Troubleshooting	X	X	X	X	X	X	X	X		X			
Basic PLC			X	X	X	X							
Industrial Wiring			X	X	X	X							
Drive Components & Bearings			X	X	X					X			
Robotics & Material Handling			X	X			X						
Electrical Troubleshooting					X	X							
National Electrical Code						X							
Electronics I						X							
Introduction to Digital Electronics						X							
Industrial Motion Controls						X							
Electric Motors & Controls						X							
Screw Machine Theory & Methods											X		
Precision Screw Machine											X		
Screw Machine Operation & Intro to Set-up											X		

X = Required Course E = Elective Course

For more information, please feel free to contact Annette Norris, Program Director,
The Academy for Manufacturing Careers, at: (517) 782-8269. Thank You.