POLARIS MEP
Manufacturing Forward

PROFESSIONAL DEVELOPMENT
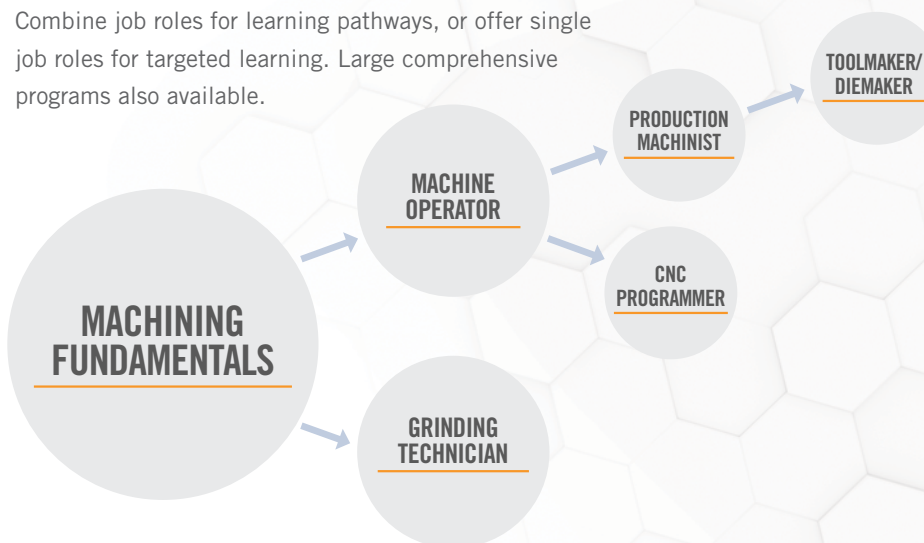
LEARNING PLANS FOR MANUFACTURING JOB ROLES

Online Training from Polaris MEP and Tooling U-SME offers a quick-start, progressive road map that allows manufacturers to build career paths for employees. This online training is intended to enhance your existing on the job training, to create a job progression plan and requires minimal preparation. It is efficient, effective training that has been developed with input from manufacturing experts.

FLEXIBLE AND CONVENIENT

Online classes are self-paced, typically taking 60 minutes to complete. They are easily and conveniently accessible on desktops and laptops, and on tablets and phones with the Tooling U-SME app.

CAREER PATHWAYS FOR MACHINING JOB ROLES

Combine job roles for learning pathways, or offer single job roles for targeted learning. Large comprehensive programs also available.

TOOLMAKER/ DIEMAKER

PRODUCTION MACHINIST

MACHINE OPERATOR

CNC PROGRAMMER

MACHINING FUNDAMENTALS

GRINDING TECHNICIAN

Online Training offers:

- Content developed by industry experts

- Accessible anytime, anywhere

- Self-paced

- Predefined curriculum for each job role

- Engaging and interactive content

- Pre- and post-training knowledge assessments

- Access to Tooling U-SME's Learning Management System (LMS)

- Guidance from our Client Success team, including advice, insights, and ideas built on best practices and years of experience

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Manufacturing Forward   PART OF THE   MEP National Network

To begin your training program or for more information, contact Lindsey Brickle, Workforce Program Manager at **401-641-8032** or **lbrickle@polarismep.org**

Choose a starting point based on employee's experience or company goals for a quick-start training solution.

MACHINING

MACHINING FUNDAMENTALS

Basic Measurement	Essentials of Heat Treatment of Steel	Overview of Machine Tools	Noise Reduction and Hearing Conservation	Geometry: Lines and Angles
Basics of Tolerance	Ferrous Metals	ISO 9001 Review	Personal Protective Equipment	Geometry: Triangles
Blueprint Reading	Introduction to Mechanical Properties	Bloodborne Pathogens	Powered Industrial Truck Safety	Math Fundamentals
Calibration Fundamentals	Band Saw Operation	Fire Safety and Prevention	Safety for Lifting Devices	Math: Fractions and Decimals
Hole Standards and Inspection	Basic Cutting Theory	Hand and Power Tool Safety	SDS and Hazard Communication	Trigonometry: Sine, Cosine, Tangent
Thread Standards and Inspection	Cutting Processes	Intro to OSHA	Walking and Working Surfaces	Units of Measurement
5S Overview	Introduction to Metal Cutting Fluids	Lockout/Tagout Procedures	Geometry: Circles and Polygons	
Lean Manufacturing Overview	Metal Cutting Fluid Safety			

GRINDING TECHNICIAN

Basic Grinding Theory	Grinding Nonferrous Metals	Setup for the Cylindrical Grinder	Surface Texture and Inspection	Chucks, Collets, and Vises
Basics of the Centerless Grinder	Grinding Processes	Setup for the Surface Grinder	Metrics for Lean	Clamping Basics
Basics of the Cylindrical Grinder	Grinding Safety	Surface Grinder Operation	Process Flow Charting	Locating Devices
Basics of the Surface Grinder	Grinding Variables	Basics of G Code Programming	SPC Overview	Supporting and Locating Principles
Centerless Grinder Operation	Grinding Wheel Geometry	Introduction to CNC Machines	Strategies for Setup Reduction	
Cylindrical Grinder Operation	Grinding Wheel Materials	Introduction to Fastener Threads	Troubleshooting	
Dressing and Truing	Introduction to Grinding Fluids	Introduction to GD&T	Essentials of Communication	
Grinding Ferrous Metals	Setup for the Centerless Grinder	Major Rules of GD&T	Essentials of Leadership	

MACHINE OPERATOR

Basics of G Code Programming	Coordinates for the CNC Lathe	SPC Overview	Manual Mill Operation	Clamping Basics
Basics of the CNC Lathe	Coordinates for the CNC Mill	Benchwork and Layout Operations	Manual Mill Setup	Locating Devices
Basics of the CNC Mill	Introduction to CNC Machines	Engine Lathe Basics	Classification of Steel	Supporting and Locating Principles
Control Panel Functions for the CNC Lathe	Offsets on the CNC Lathe	Engine Lathe Operation	Intro to EDM	
Control Panel Functions for the CNC Mill	Offsets on the CNC Mill	Engine Lathe Setup	Safety for Metal Cutting	
	Introduction to Fastener Threads	Holemaking on the Manual Mill	Machine Guarding	
	Surface Texture and Inspection	Manual Mill Basics	Chucks, Collets, and Vises	

CNC PROGRAMMER

Calculations for Programming the Lathe	Creating a CNC Milling Program	Introduction to GD&T	Introduction to Metals	Automated Systems and Control
Calculations for Programming the Mill	Creating a CNC Turning Program	Major Rules of GD&T	Speed and Feed for the Lathe	Robot Axes
Canned Cycles for the Lathe	Introduction to CAD and CAM for Machining	Intro to Six Sigma	Speed and Feed for the Mill	
Canned Cycles for the Mill	In-Line Inspection Applications	Metrics for Lean	Quality and Customer Service	

PRODUCTION MACHINIST

Calculations for Programming the Lathe	Creating a CNC Turning Program	Troubleshooting	Cutting Tool Materials	Speed and Feed for the Lathe
Calculations for Programming the Mill	Introduction to GD&T	Taper Turning on the Engine Lathe	Drill Tool Geometry	Speed and Feed for the Mill
Canned Cycles for the Lathe	Major Rules of GD&T	Threading on the Engine Lathe	Impact of Workpiece Materials	Essentials of Communication
Canned Cycles for the Mill	Metrics for Lean	ANSI Insert Selection	Lathe Tool Geometry	Essentials of Leadership
Creating a CNC Milling Program	Process Flow Charting	Basic Cutting Theory	Mill Tool Geometry	
	Strategies for Setup Reduction	Carbide Grade Selection	Optimizing Tool Life and Process	

TOOLMAKER AND DIEMAKER

Basic Grinding Theory	Dressing and Truing	Grinding Safety	Introduction to Grinding Fluids	Die Cutting Variables
Basics of the Cylindrical Grinder	Grinding Ferrous Metals	Grinding Variables	Setup for the Cylindrical Grinder	Material Tests for Welding
Basics of the Surface Grinder	Grinding Nonferrous Materials	Grinding Wheel Geometry	Setup for the Surface Grinder	Fixture Design Basics
Cylindrical Grinder Operation	Grinding Processes	Grinding Wheel Materials	Surface Grinder Operation	

— New content is always being added. Check with your representative for the most current list of classes. —