



## PROFESSIONAL DEVELOPMENT

### LEARNING PLANS FOR MANUFACTURING JOB ROLES

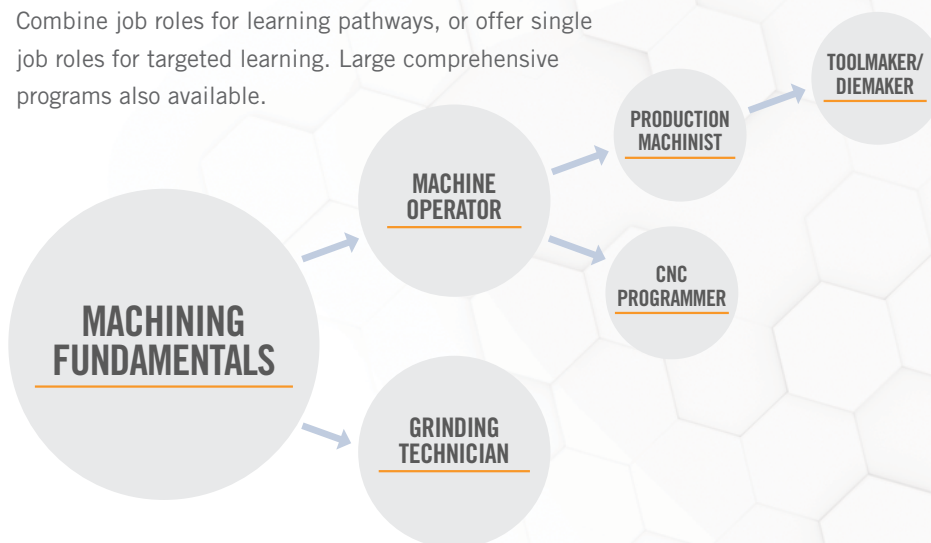
Online Training from Northwest State Community College and Tooling U-SME offers a quick-start, progressive road map that allows manufacturers to build career paths for employees. This online training is intended to enhance your existing on the job training, to create a job progression plan and requires 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.



## 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

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

# MACHINING

## MACHINING FUNDAMENTALS

|                          |                                       |                                       |  |                                     |
|--------------------------|---------------------------------------|---------------------------------------|--|-------------------------------------|
| 5S Overview              | Cutting Processes                     | Hole Standards and Inspection         | Math: Fractions and Decimals             | SDS and Hazard Communication        |
| Band Saw Operation       | Essentials of Heat Treatment of Steel | Intro to OSHA                         | Metal Cutting Fluid Safety               | Thread Standards and Inspection     |
| Basic Cutting Theory     | Ferrous Metals                        | Introduction to Mechanical Properties | Noise Reduction and Hearing Conservation | Trigonometry: Sine, Cosine, Tangent |
| Basic Measurement        | Fire Safety and Prevention            | Introduction to Metal Cutting Fluids  | Overview of Machine Tools                | Units of Measurement                |
| Basics of Tolerance      | Geometry: Circles and Polygons        | ISO 9001: 2015 Review                 | Personal Protective Equipment            | Walking and Working Surfaces        |
| Bloodborne Pathogens     | Geometry: Lines and Angles            | Lean Manufacturing Overview           | Powered Industrial Truck Safety          |                                     |
| Blueprint Reading        | Geometry: Triangles                   | Lockout/Tagout Procedures             | Safety for Lifting Devices               |                                     |
| Calibration Fundamentals | Hand and Power Tool Safety            | Math Fundamentals                     |  |                                     |

## GRINDING TECH

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

## MACHINE OPERATOR

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

## CNC PROGRAMMER

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

## PRODUCTION MACHINIST

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

## TOOL AND DIE MAKER

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