



## PROFESSIONAL DEVELOPMENT

### LEARNING PLANS FOR MANUFACTURING JOB ROLES

Online Training from RTMA 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.

**Manufacturing Fundamentals introduces basic concepts in the following functional areas:**



**Manufacturing Fundamentals**



**Assembly**



**Composites**



**Machining**



**Maintenance**



**Stamping/Forming/  
Fabrication**



**Welding**

### 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

## MANUFACTURING

Basic Measurement Calibration Fundamentals 5S Overview Lean Manufacturing Overview Ferrous Metals	Introduction to Mechanical Properties Introduction to Metals Introduction to Physical Properties	Nonferrous Metals ISO 9001 Review Fire Safety and Prevention Flammable/Combustible Liquids	Intro to OSHA Lockout/Tagout Procedures Noise Reduction and Hearing Conservation	Personal Protective Equipment Powered Industrial Truck Safety Safety for Lifting Devices	SDS and Hazard Communication Walking and Working Surfaces
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## ASSEMBLY

Types of Adhesives Introduction to Assembly Overview of Non-Threaded Fasteners Overview of Threaded Fasteners Safety for Assembly Threaded Fastener Selection	Tools for Threaded Fasteners Basic Measurement Calibration Fundamentals Thread Standards and Inspection Ferrous Metals Introduction to Mechanical Properties	Introduction to Metals Introduction to Physical Properties Nonferrous Metals 5S Overview ISO 9001 Review Lean Manufacturing Overview	Intro to Machine Rigging Lifting and Moving Equipment Rigging Equipment Rigging Inspection and Safety Ergonomics Fire Safety and Prevention	Flammable/Combustible Liquids Hand and Power Tool Safety Intro to OSHA Lockout/Tagout Procedures Noise Reduction and Hearing Conservation	Personal Protective Equipment Powered Industrial Truck Safety Safety for Lifting Devices SDS and Hazard Communication Walking and Working Surfaces
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## COMPOSITES

Advanced Materials for Composites Advanced Thermoset Resins for Composites Intro to Compression Molding Intro to Lay-up and Spray-up Molding	Overview of Composite Processes Safety for Composite Processing Basic Measurement Calibration Fundamentals	5S Overview Lean Manufacturing Overview Ferrous Metals Introduction to Mechanical Properties Introduction to Metals	Introduction to Physical Properties Nonferrous Metals ISO 9001 Review Fire Safety and Prevention Flammable/Combustible Liquids	Intro to OSHA Lockout/Tagout Procedures Noise Reduction and Hearing Conservation Personal Protective Equipment Powered Industrial Truck Safety	Safety for Lifting Devices SDS and Hazard Communication Walking and Working Surfaces
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## MACHINING

Basics of the Centerless Grinder Basics of the Cylindrical Grinder Basics of the Surface Grinder Grinding Processes Basics of the CNC Lathe Basics of the CNC Mill	Coordinates for the CNC Lathe Coordinates for the CNC Mill Introduction to CNC Machines Basic Measurement Calibration Fundamentals 5S Overview Lean Manufacturing Overview Engine Lathe Basics	Manual Mill Basics Ferrous Metals Mechanical Power Variables Introduction to Mechanical Properties Introduction to Metals Introduction to Physical Properties Nonferrous Metals	Basic Cutting Theory Cutting Processes Overview of Machine Tools ISO 9001 Review Fire Safety and Prevention Flammable/Combustible Liquids Intro to OSHA	Lockout/Tagout Procedures Noise Reduction and Hearing Conservation Personal Protective Equipment Powered Industrial Truck Safety Safety for Lifting Devices SDS and Hazard Communication	Walking and Working Surfaces Chucks, Collets, and Vises Clamping Basics Introduction to Workholding Locating Devices Supporting and Locating Principles
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## MAINTENANCE

5S Overview Calibration Fundamentals Introduction to Mechanical Properties Introduction to Physical Properties Lean Manufacturing Overview Ferrous Metals	Introduction to Mechanical Systems Introduction to Metals Nonferrous Metals Electrical Units Forces of Machines Safety for Electrical Work Safety for Mechanical Work	Lubricant Fundamentals Mechanical Power Variables Basics of Siemens PLCs Intro to OSHA Introduction to PLCs ISO 9001 Review Personal Protective Equipment Fire Safety and Prevention	Lockout/Tagout Procedures Noise Reduction and Hearing Conservation SDS and Hazard Communication Walking and Working Surfaces Flammable/Combustible Liquids	Safety for Lifting Devices Powered Industrial Truck Safety Basic Measurement DC Circuit Components Introduction to Circuits Introduction to Hydraulic Components	Introduction to Magnetism Introduction to Pneumatic Components Safety for Hydraulics and Pneumatics The Forces of Fluid Power
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## FORMING FABRICATING STAMPING

Basic Measurement Calibration Fundamentals 5S Overview Lean Manufacturing Overview Ferrous Metals	Introduction to Mechanical Properties Introduction to Metals Introduction to Physical Properties	Nonferrous Metals Overview of Machine Tools Press Brake Components ISO 9001 Review Fire Safety and Prevention Intro to OSHA	Lockout/Tagout Procedures Noise Reduction and Hearing Conservation Personal Protective Equipment Powered Industrial Truck Safety	Safety for Lifting Devices SDS and Hazard Communication Walking and Working Surfaces Manufacturing Process Applications: Part I	Die Components Press Basics Punch and Die Operations
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## WELDING

Basic Measurement Calibration Fundamentals 5S Overview Lean Manufacturing Overview Ferrous Metals Introduction to Mechanical Properties	Introduction to Metals Introduction to Physical Properties Nonferrous Metals ISO 9001 Review Fire Safety and Prevention Flammable/Combustible Liquids	Intro to OSHA Lockout/Tagout Procedures Noise Reduction and Hearing Conservation Personal Protective Equipment Powered Industrial Truck Safety	Safety for Lifting Devices SDS and Hazard Communication Walking and Working Surfaces Electrical Power for Arc Welding Electrical Safety for Welding	Geometry Fundamentals for Welding Introduction to Welding Introduction to Welding Processes Math Fundamentals for Welding	Overview of Weld Types PPE for Welding Welding Ferrous Metals Welding Fumes and Gases Safety Welding Nonferrous Metals Welding Safety Essentials
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