



## PROFESSIONAL DEVELOPMENT

### LEARNING PLANS FOR MANUFACTURING JOB ROLES

Online Training from MANTEC 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 ENGINEERING JOB ROLES

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

**ENGINEERING  
FUNDAMENTALS**

**ENGINEERING  
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

## ENGINEERING FUNDAMENTALS

Units of Measurement  
Basics of Tolerance  
Blueprint Reading  
Algebra Fundamentals  
Geometry: Lines and Angles  
Geometry: Triangles

Geometry: Circles and Polygons  
Trigonometry: The Pythagorean Theorem  
Trigonometry: Sine, Cosine, Tangent  
Statistics  
Introduction to Physical Properties  
Introduction to Mechanical Properties

Introduction to Metals  
Introduction to Plastics  
Essentials of Heat Treatment of Steel  
Lean Manufacturing Overview  
Cutting Processes  
Introduction to CAD and CAM for Machining

Electrical Units  
Introduction to Circuits  
DC Circuit Components  
AC Fundamentals  
Introduction to Ceramics  
Introduction to Additive Manufacturing

Additive Manufacturing Safety  
Additive Manufacturing Methods and Materials  
Intro to Assembly  
Introduction to Composites

## ENGINEERING TECHNICIAN

Supporting and Locating Principles  
Fixture Design Basics  
Introduction to GD&T  
Hand and Power Tool Safety  
Classification of Steel  
Hardness Testing  
Ferrous Metals  
Nonferrous Metals  
Thermoplastics  
Thermosets

ISO 9001:2015 Review  
Troubleshooting  
SPC Overview  
Lathe Tool Geometry  
Mill Tool Geometry  
Drill Tool Geometry  
Basics of G Code Programming  
Punch and Die Operations  
Series Circuit Calculations  
Parallel Circuit Calculations

Basics of Siemens PLCs  
Siemens PLC Communication  
Basic Ladder Diagram Programming for Siemens PLCs  
Forces of Machines  
Introduction to PLCs  
Basics of Ladder Logic  
Networking for PLCs  
The Forces of Fluid Power  
Introduction to Hydraulic Components

Introduction to Pneumatic Components  
Power Transmission Components  
Introduction to Welding Processes  
Applied and Engineering Sciences  
Manufacturing Process Applications: Part I  
Manufacturing Process Applications: Part II  
Product Design and Development  
Process Design and Development

Production System Design and Development  
Equipment/Tool Design and Development  
Automated Systems and Control  
Quality and Customer Service  
Manufacturing Management  
Personal Effectiveness

