

PROFESSIONAL DEVELOPMENT

LEARNING PLANS FOR MANUFACTURING JOB ROLES

Online Training from Columbus 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 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

