LEARNING PLANS FOR MANUFACTURING JOB ROLES

Online Training from 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 MAINTENANCE 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
MAINTENANCE FUNDAMENTALS

Math Fundamentals
- Math: Fractions and Decimals
- Units of Measurement
- OSHA Hazard Communication
- Labels Overview
- Hazardous Materials Handling
- Fall Protection
- Light Curtains Overview
- Introduction to OSHA
- Personal Protective Equipment
- Noise Reduction and Hearing
- Conservation
- Respiratory Safety

Lockout/Tagout Procedures
- SDS and Hazard Communication
- Bloodborne Pathogens
- Walking and Working Surfaces
- Fire Safety and Prevention
- Flammable/Combustible Liquids
- Hand and Power Tool Safety
- Safety for Lifting Devices
- Powered Industrial Truck Safety
- Confined Spaces
- Hand Tool Safety*
- Lockout Tagout Procedures*
- Power Tool Safety*

Safety Awareness in Manufacturing*
- Fire Safety*
- Introduction to Machine Rigging
- Rigging Equipment
- Rigging Inspection and Safety
- ISO 9001:2015 Review
- Approaches to Maintenance
- Introduction to Machine Systems
- Safety for Mechanical Work
- Forces of Machines
- Introduction to Physical Properties
- Introduction to Mechanical Properties

Introduction to Metals
- Ferrous Metals
- Lean Manufacturing Overview
- Total Productive Maintenance
- SS Overview
- SS and Hand Tool Identification*
- Skills Guide - Lean**
- Thread Standards and Inspection
- Types of Prints & Engineering Drawings
- Basics of Tolerance

Electrical Maintenance Technicians are responsible for the general upkeep of electrical systems. They conduct routine maintenance, perform repairs, and fix faulty wiring when necessary. They may also be required to replace electrical components.

MECHANICAL MAINTENANCE TECHNICIAN

Introduction to Fluid Conductors
- Introduction to Fastener Threads
- Understanding Torque
- Threaded Fastener Selection
- The Forces of Fluid Power
- Safety for Hydraulics and Pneumatics
- Introduction to Hydraulic Components
- Introduction to Pneumatic Components
- Introduction to Fluid Conductors

Fittings for Fluid Systems
- Series Circuit Calculations
- Parallel Circuit Calculations
- Testing an AC Induction Motor with Multimeter
- Voltage Checks for a Variable Frequency Drive Panel*
- Troubleshooting
- Skills Guide - Troubleshooting**
- Spc for Servomotors
- Timers and Counters
- Electronic Semiconductor Devices

Power Transmission Components
- Photometric/Scintillating Devices
- Photovoltaic and Ultrasonic Devices
- Devices Reduced Voltage Starting
- Solid-State Relays and Starters
- Relays, Contactors, and Motor Starters
- Control Devices
- Distribution Systems
- Limit Switches and Proximity Sensors

Introduction to Electric Motors
- Introduction to Electric Motors
- Symbols and Diagrams for Motors

Mechanical Maintenance Technicians are responsible for maintaining, troubleshooting, and repairing manufacturing equipment. They may be required to install, troubleshoot and maintain mechanical devices, remove defective parts and make repairs.

AUTOMATION MAINTENANCE TECHNICIAN

Introduction to Fluid Conductors
- Introduction to Smart Manufacturing
- Cybersecurity for Manufacturing Basics
- Machine Learning and Artificial Intelligence Applications
- Data Collection Fundamentals
- Skills Guide - Troubleshooting**
- Belt Drive Applications
- Clutch and Brake Applications
- Deceleration Methods

Acceleration Methods
- Introduction to PLCs
- PID Guides
- PLC Data Manipulation
- PLC Implementations
- PLC Event Programs
- PLC Counter and Timers
- Hand-Held Programmers of PLCs

Introduction to PLC Registers
- PLC Program Control Instructions
- PLC Installation Practices
- PID for PLCs
- Data Manipulation
- Introduction to Robotics
- Automated Systems and Controls
- Robot Components
- End Effectors
- Robot Applications
- Robot Axes and Pathways

Overview of PLC Applications
- Robot Sensors
- Robot Maintenance
- Robot Power and Drive Systems
- Robot Plant Controls
- Robot Control Systems
- Vision Systems
- Industrial Network Integration
- Robot Safety
- Robot Troubleshooting
- Concepts of Robot Programming

Automation Technicians maintain and repair robots or peripheral equipment, such as replacement of defective circuit boards, sensors, controllers, encoders, PLCs, or, end-of-arm tools, or servomotors.

PRODUCTION MAINTENANCE TECHNICIAN

Introduction to CNC Machines
- Control Panel Functions for the CNC Lathe
- Control Panel Functions for the CNC Mill
- The Forces of Fluid Power
- Preventive Maintenance for Fluid Systems
- Introduction to Fluid Systems
- Piping and Instrumentation Diagrams
- Actuator Applications

Hydraulic Power Variables
- Pneumatic Power Variables
- Pneumatic Power Sources
- Pneumatic Control Valves
- Pneumatic Schematics and Basic Circuit Design
- Pneumatic Control Valves
- Pneumatic Schematics and Basic Circuit Design
- Hydraulic Fluid Selection
- Contaminant and Filter Selection

Hydraulic Principles and System Design
- Interpreting Prints
- Conducting Kaizen Events
- Skills Guide - Troubleshooting**
- Benchwork and Layout Operations
- Relays, Contactors, and Motor Starters
- Control Devices
- Limit Switches and Proximity Sensors
- Sensors
- Motor Drive Systems
- Automation
- Electrical Panel Maintenance for Motor Drive Systems
- Mechanical Maintenance for Motor Drive Systems
- Electromechanical Systems
- Essentials of Leadership
- Essentials of Communication
- Overview of Soldering
- Welding Safety Essentials
- PPE for Welding
- Welding Fumes and Gas Safety
- Electrical Safety for Welding

A Production Maintenance Technician performs preventive maintenance and skilled repairs on complex electrical and mechanical production equipment and systems, sensor or feedback systems, hydraulics, or pneumatics.

*: VR Lab    **: Skills Guide