# MAINTENANCE



## PROFESSIONAL DEVELOPMENT

#### LEARNING PLANS FOR MANUFACTURING JOB ROLES

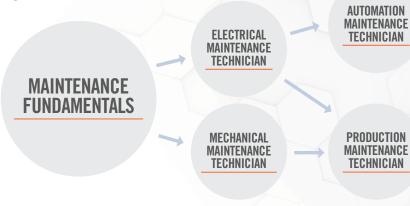
Online Training from Tooling U-SME offers a quick-start, progressive road map that allows manufacturers to build career paths for employees. This online training is intended to enhance your existing on the job training, to create a job progression plan and requires minimal preparation. It is efficient,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





To begin your training program or for more information, contact us at **608-240-1740** or **info@wmep.org** 

Lockout/Tagout Procedures

Fire Safety and Prevention

Safety for Lifting Devices

Lockout Tagout Procedures'

Confined Spaces

Hand Tool Safety<sup>3</sup>

Power Tool Safety\*

Bloodborne Pathogens

SDS and Hazard Communication

Walking and Working Surfaces

Flammable/Combustible Liquids Hand and Power Tool Safety

Powered Industrial Truck Safety

# MAINTENANCE

### 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

Maintenance Fundamentals provides an introduction to common manufacturing maintenance competencies, including Safety, Mathematics used in manufacturing, Electrical and Mechanical Systems, Inspection, Rigging, Quality & Lean, and Industry 4.0.

may also be required to replace electrical components.

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 Mechanical 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 5S Overview 5S 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 system.

They conduct routine maintenance, perform repairs, and fix faulty wiring when necessary. They

Blueprint Reading Basic Measurement Calibration Fundamentals Rigging Equipment Safety and Inspection\* Skills Guide - Blue Print Reading\*\* Augmented Worker Electrical Units Safety for Electrical Work

### ELECTRICAL MAINTENANCE TECHNICIAN

Introduction to Circuits Introduction to Magnetism DC Circuit Components NEC(R) Overview AC Fundamentals Electrical Instruments Electrical Print Reading DC Power Sources AC Power Sources Conductor Selection Wire Harness Components

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\*: Specs for Servomotors . Timers and Counters Electronic Semiconductor Devices

Photonic Semiconductor Devices Photoelectric and Ultrasonic 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

Symbols and Diagrams for Motors Logic and Line Diagrams DC Motor Applications Solenoids AC Motor Applications Reversing Motor Circuits Arc Flash Safety High Voltage Safety Algebra Fundamentals What Is Soldering? Safety for Soldering

Soldering Equipment Soldering Applications Solder and Flux Selection Soldering PCBs Lead-Free Soldering 230 Essentials of Leadership Essentials of Communication Overview of Soldering

### MECHANICAL MAINTENANCE TECHNICIAN

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

Fittings for Fluid Systems Hole Standards and Inspection Thread Standards and Inspection Troubleshooting Skills Guide - Troubleshooting Essentials of Heat Treatment of Steel\*\* Nonferrous Metals Introduction to Mechanical Systems Safety for Mechanical Work Forces of Machines

mechanical devices, remove defective parts and make repairs. Power Transmission Components Lubricant Fundamentals Mechanical Power Variables Bearing Applications Spring Applications Belt Drive Applications Gear Applications Clutch and Brake Applications Distribution Systems Introduction to Electric Motors Symbols and Diagrams for Motors

Logic and Line Diagrams DC Motor Applications Solenoids AC Motor Applications Reversing Motor Circuits Introduction to PLCs Lifting and Moving Equipment Rigging Mechanics Algebra Fundamentals Geometry: Lines and Angles

Automation Technicians maintain and repair robots or peripheral equipment, such as

replacement of defective circuit boards, sensors, controllers, encoders, PLCs, or, end-of-arm

Mechanical Maintenance Technicians are responsible for maintaining, troubleshooting, and

repairing manufacturing equipment. They may be required to install, troubleshoot and maintain

Geometry: Triangles Geometry: Circles and Polygons Trigonometry: The Pythagorean Theorem Trigonometry: Sine, Cosine, Tangent Essentials of Leadership Essentials of Communication Assembly with Mechanical Fasteners<sup>3</sup>

### 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 Shift Registers Sequencer Instructions for PLCs PLC Diagrams and Programs Hardware for PLCs Numbering Systems and Codes PLC Inputs and Outputs Basic Programming for PLCs PLC Counters and Timers Hand-Held Programmers of PLCs

tools, or servomotors. Overview of PLC Registers Robot Sensors PLC Program Control Instructions Robot Maintenance PLC Installation Practices Robot Power and Drive Systems PID for PLCs Robot Installations Data Manipulation Robot Control Systems Introduction to Robotics Automated Systems and Controls

systems, hydraulics, or pneumatics.

Vision Systems Industrial Network Integration Robot Safety Robot Troubleshooting Concepts of Robot Programming

A Production Maintenance Technician performs preventive maintenance and skilled repairs

on complex electrical and mechanical production equipment and systems, sensor or feedback

Robot Applications: Palletizing Robot Applications: Machine Tending Introduction to Collaborative Robots Skills Guide - Robotics\* Essentials of Leadership Essentials of Communication Voltage Checks for a Variable Frequency Drive Panel

### 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

\*: VR Lab \*\*: Skills Guide

Hydraulic Power Sources Pneumatic Power Variables Pneumatic Power Sources Hydraulic Control Valves Hydraulic Schematics and Basic Circuit Design Pneumatic Control Valves Pneumatic Schematics and Basic Circuit Design Hydraulic Fluid Selection Contamination 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 Motor Drive Systems and Maintenance

Robot Components

Robot Applications

Robot Axes and Pathways

End Effectors

Electrical Maintenance for Motor Drive Systems Mechanical Maintenance for Moto Drive Systems Essentials of Leadership Essentials of Communication Overview of Soldering Welding Safety Essentials PPE for Welding Welding Fumes and Gases Safety Electrical Safety for Welding Introduction to Welding

Introduction to Welding Processes Plasma Cutting SMAW Applications GMAW Applications What Is Oxyfuel Welding? Shielded Metal Arc Welding\* Gas Metal Arc Welding\*





To begin your training program or for more information, contact us at 608-240-1740 or info@wmep.org