# **MECHATRONICS**



## PROFESSIONAL DEVELOPMENT

# LEARNING PLANS FOR MANUFACTURING JOB ROLES

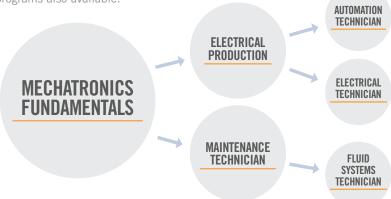
Online Training from INNOVATE Hawaii and Tooling U-SME offers a quick-start, progressive road map that allows manufacturers to build career paths for employees. This online training is intended to enhance your existing on the job training, to create a job progression plan and requires minimal preparation.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



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 MECHATRONICS 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, call (808) 539-3794 or email info@innovatehawaii.org









## **MECHATRONICS**

#### MECHATRONICS FUNDAMENTALS

Electrical Units Safety for Electrical Work Basic Measurement Basics of Tolerance Blueprint Reading Calibration Fundamentals Hole Standards and Inspection

Thread Standards and Inspection 5S Overview Lean Manufacturing Overview Ferrous Metals Introduction to Mechanical

Properties

Introduction to Metals

Introduction to Mechanical Systems Safety for Mechanical Work Approaches to Maintenance ISO 9001 Review

Introduction to Physical

Properties

Forces of Machines

Bloodborne Pathogens Confined Spaces Fire Safety and Prevention Flammable/Combustible Hand and Power Tool Safety Intro to OSHA

Lockout/Tagout Procedures

Conservation Personal Protective Equipment Powered Industrial Truck Safety Respiratory Safety Safety for Lifting Devices

Noise Reduction and Hearing

SDS and Hazard Communication Walking and Working Surfaces Math Fundamentals Math: Fractions and Decimals Units of Measurement

## **ELECTRICAL PRODUCTION**

Control Panel Functions for the CNC Lathe Control Panel Functions for the CNC Mill Introduction to CNC Machines AC Fundamentals Conductor Selection

DC Circuit Components Electrical Instruments Flectrical Print Reading Introduction to Circuits Introduction to Magnetism NEC(R) Overview

Parallel Circuit Calculations Series Circuit Calculations Troubleshooting Essentials of Heat Treatment of Steel Lubricant Fundamentals

Control Devices Distribution Systems Introduction to Flectric Motors Limit Switches and Proximity Sensors Logic and Line Diagrams

Relays, Contactors, and Motor Starters Algebra Fundamentals Geometry: Circles and Polygons Geometry: Lines and Angles Geometry: Triangles

Trigonometry: Sine, Cosine, Trigonometry: The Pythagorean Theorem Essentials of Communication Essentials of Leadership Overview of Soldering

Geometry: Circles and

Polygons

#### MAINTENANCE PRODUCTION

Battery Selection Parallel Circuit Calculations Series Circuit Calculations Introduction to Fastener Overview of Non-Threaded

Fasteners Overview of Threaded

Threaded Fastener Selection

Tools for Threaded Fasteners Understanding Torque Fittings for Fluid Systems Introduction to Fluid Conductors

Introduction to Hydraulic Components Introduction to Pneumatic

Preventive Maintenance for Fluid Systems

Safety for Hydraulics and Pneumatics

The Forces of Fluid Power Troubleshooting Essentials of Heat Treatment of Steel

Nonferrous Metals Bearing Applications Belt Drive Applications Clutch and Brake Applications

Gear Applications Lubricant Fundamentals Mechanical Power Variables Spring Applications AC Motor Applications DC Motor Applications Distribution Systems Introduction to Electric Motors Logic and Line Diagrams Reduced Voltage Starting

Reversing Motor Circuits Solenoids Specs for Servomotors Symbols and Diagrams for Intro to Machine Rigging Rigging Equipment Rigging Inspection and Safety

Rigging Mechanics

Algebra Fundamentals

Geometry: Lines and Angles Geometry: Triangles Trigonometry: Sine, Cosine, Tangent Trigonometry: The Pythagorean Theorem Essentials of Communication Essentials of Leadership

#### AUTOMATION TECHNICIAN

Threads Overview of Non-Threaded

Fasteners Overview of Threaded

Fasteners Threaded Fastener Selection Tools for Threaded Fasteners Understanding Torque

Fittings for Fluid Systems

Conductors

Introduction to Hydraulic Components Introduction to Pneumatic

Components Safety for Hydraulics and Pneumatics

The Forces of Fluid Power Bearing Applications

Belt Drive Applications Clutch and Brake Applications Gear Applications Mechanical Power Variables

Spring Applications Basic Programming for PLCs Basics of Ladder Logic Data Manipulation

PLC Inputs and Outputs Hand-Held Programmers of PLCs PLC Installation Practices

Hardware for PLCs PLC Program Control Instructions Introduction to PLCs Sequencer Instructions for Networking for PLCs Numbering Systems and

Intro to Machine Rigging Codes Rigging Equipment Overview of PLC Registers Rigging Inspection and Safety PID for PLCs Rigging Mechanics PLC Counters and Timers Concepts of Robot

End Effectors Robot Axes Robot Components Robot Installations Robot Maintenance Robot Safety Robot Sensors Robot Troubleshooting Vision Systems

## **ELECTRICAL TECHNICIAN**

Battery Selection Introduction to Fastener Threads Overview of Non-Threaded

Fasteners Overview of Threaded

Threaded Fastener Selection Tools for Threaded Fasteners Understanding Torque Fittings for Fluid Systems Introduction to Fluid Conductors

Introduction to Hydraulic Components Introduction to Pneumatic

Components Safety for Hydraulics and Pneumatics

The Forces of Fluid Power

Nonferrous Metals Bearing Applications Belt Drive Applications Clutch and Brake Applications Gear Applications Mechanical Power Variables Spring Applications

AC Motor Applications DC Motor Applications Distribution Systems Reduced Voltage Starting Reversing Motor Circuits Solenoids Specs for Servomotors

Programming

Symbols and Diagrams for Motors Intro to Machine Rigging Rigging Equipment Rigging Inspection and Safety Rigging Mechanics

### FLUID SYSTEMS TECHNICIAN

Control Panel Functions for the CNC Lathe Introduction to CNC Machines AC Fundamentals AC Power Sources Conductor Selection

DC Circuit Components DC Power Sources Electrical Instruments

Electrical Print Reading Introduction to Circuits Introduction to Magnetism NEC(R) Overview Actuator Applications Contamination and Filter Selection Hydraulic Control Valves

Hydraulic Fluid Selection

Hydraulic Power Sources Hydraulic Power Variables Hydraulic Principles and System Design Hydraulic Schematics and

Basic Circuit Design Pneumatic Control Valves Pneumatic Power Sources Pneumatic Power Variables Pneumatic Schematics and Basic Circuit Design Benchwork and Lavout Operations Control Devices Distribution Systems

Limit Switches and Proximity

Sensors

Relays, Contactors, and Motor Starters Electrical Safety for Welding **GMAW Applications** Introduction to Welding Introduction to Welding Processes Overview of Soldering

Oxyfuel Welding Applications Plasma Cutting PPE for Welding SMAW Applications Welding Fumes and Gases Safety Welding Safety Essentials What Is Oxyfuel Welding?

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