Computer-Based Online Theory and Curriculum Training

Hands-On Instruction and Assessment

Lehigh Carbon Community College
Mechatronics Level 1 Pre-Apprenticeship
70 LAPs, 368 Hours
Registered with PA Department of Labor and Industry

Lehigh Carbon COMMUNITY COLLEGE
CENTER FOR WORKFORCE DEVELOPMENT

Mathematics 1 – WXMA101
- Basic Math
- Fractions, Decimals and Percentages
- Geometry Basics

Blueprint Reading – WXBP101
- Blueprint Lines

Safety Practices and Regulations – WXSA101
- Workplace Safety

Hazardous Materials – WXSA103
- Hazard Material Communication

Lockout/Tagout – WXSA105
- Lockout/Tagout

Confined Spaces – WXSA104
- Confined Spaces Safety

Accident Response – WXSA106
- Accident Response

Personal Protective Equipment – WXSA102
- PPE in the Workplace

Measurement Tools – V19017
- Basic Measurement
- Precision Measurement Tools
- Dimensional Gauging

Lean Theory – WXLM101
- Introduction to Lean Manufacturing

Total Productive Maintenance – WXLM103
- Total Productive Maintenance (TPM)

AC/DC Electrical Circuits – VB227
- Basic Electrical Circuits
- Electrical Measurements
- Circuit Analysis
- Inductance and Capacitance
- Combination Circuits
- Transformers

Electrical Control 1 – VB703
- Control Logic
- Sequencing Control
- Timers and Advanced Systems

Electrical Motor Control – V17901
- Introduction to Electrical Motor Control
- Manual Motor Control and Overload Protection
- Control Transformers
- Control Ladder Logic
- Control Relays and Motor Starters
- Introduction to Troubleshooting
- Systems Troubleshooting
- Reversing Motor Control

Electric Wiring System – W17448
- Introduction to Electrical Control Wiring
- Wiring Electrical Panels

Electronic Sensors – W17404
- Electronic Sensors

Electrical Power Distribution – W17471
- Conductor, Disconnects and Overload Protection
- Conduit Sizing and Wire Pulling Techniques

Basic Pneumatics – VB834
- Pneumatic Power Systems
- Basic Pneumatic Circuits
- Principles of Pneumatic Pressure and Flow
- Pneumatic Speed Control Circuits

Basic Hydraulics – VB831
- Hydraulic Power Systems
- Basic Hydraulic Circuits
- Principles of Hydraulic Pressure and Flow
- Hydraulic Speed Control
- Pressure and Control Circuits

Mechanical Drives 1 – W19146
- Introduction to Mechanical Drive Systems
- Key Fasteners
- Power Transmission Systems
- Introduction to V-Belt Drives
- Introduction to Chain Drives

Mechanical Drives 2 – W19152
- Heavy Duty V-Belt
- Synchronous Belt Drives
- Lubrication Concepts
- Precision Shaft Alignment
- Couplings
- Heavy Duty Chain Drives

Piping Systems – EB526
- Metal Piping Systems
- Metal Piping Installation
- Metal Tubing Systems
- Hoses

Programmable Logic Controllers – W40660
- Introduction to Programmable Controllers
- Basic PLC Programming
- PLC Motor Control
- Discrete I/O Interfacing
- PLC Timer Instructions
- PLC Counter Instructions
- PLC Troubleshooting
- System Troubleshooting
- Event Sequencing

16 hours dedicated to SACA testing