Pennsylvania College of Technology
A Penn State Affiliate

ROBOTICS & AUTOMATION

The integration of robotic automation equipment into advanced manufacturing processes has resulted in high demand for qualified technicians for maintenance and support. Often, front-line maintenance and mechatronics technicians are called upon to solve problems while maintaining these high-tech machines. This targeted apprenticeship program is designed to augment the skills of these workers with essential robotics and automation knowledge and related technical competencies.

Program Features

- Upskill maintenance personnel

- Two-year customizable apprenticeship program

- Train in any location via the *iris* platform

- Attain a PMMI credential and Penn College Certificate

TOPICS COVERED:

Year 1

◇ Programming Logic Controls and Critical Safety Practices

◇ PLC Electrical Principles, Ratings and Circuit Calculations

◇ PLC Symbols, Diagrams and Logic Functions

◇ PLC Hardware, Memory, and Operating Cycle

◇ PLC Systems, Circuits and Interface Devices

◇ PLC Programmable Diagrams, Addresses and Bit Instructions

◇ PLC Programming Timer and Counter Instructions

◇ PLC Analog Device Installation, Programming and Troubleshooting

◇ Installation and Startup

◇ Troubleshooting Methods and Test Instrument Operation

◇ Testing and Troubleshooting Electrical Devices and PLC Hardware

◇ Troubleshooting with PLC Software

◇ PLC System Maintenance

◇ PLC Number Systems

Year 2

◇ Introduction to Robotics

◇ Fundamentals of Robotics

◇ Robotic Cell Safety

◇ Robotic Programming

◇ Industrial Applications

◇ Electromechanical Systems

◇ Fluid Power Systems

◇ Robot Sensors

◇ Robot End Effectors

◇ Robotic Computer Systems and Digital Electronics

◇ Interfacing and Vision Systems

◇ Maintaining Robotic Systems

◇ Robots in Modern Manufacturing

◇ Robotic Applications and Innovations

◇ Robot Design and Construction

◇ Robotic Cells and Safety

◇ Robot Jogging

◇ Robot Frames - Referencing Frames

◇ Creating Tool Frames

◇ Creating User & Jog Frames

◇ Starting Programs

◇ Instruction Lines

◇ Registers

◇ Offsetting Position Register

◇ Inputs/Outputs and End Effectors

Penn College is approved by the PA Department of Labor & Industry as a sponsor of apprenticeship programs.