Applied Robotics

FESTO

Level 2

The **Applied Robotics** certification introduces learners to the core competencies of programming and operating industrial robots. This includes robotic fundamentals, jogging and frame setup, input/output control, and advanced programming using macros and logical decision-making. Learners apply programming to real-world tasks like object handling using end effectors, while understanding industrial safety, control systems, and the role of robotic automation in modern manufacturing.

Through immersive hands-on labs, learners will use teach pendants, simulate robot I/O, and create complete robotic sequences including pick-and-place operations. The certification is also compatible with collaborative robot platforms enabling students to gain experience in human-safe, flexible automation systems increasingly used in manufacturing, logistics, and service industries. Simulation tools such can also be utilized to enable virtual programming, testing, and troubleshooting of robotic cells.

Industry Recognized Certification Topics

- Industrial and Collaborative Robot Safety and Startup Procedures
- Robot Components and Motion Systems
- Teach Pendant and Graphical User Interface Navigation
- Jogging in Joint, World, Tool, and User Frames
- Introduction to Inputs/Outputs and Signal Configuration
- Simulation of Digital Inputs and Outputs
- Creating and Using Macros for Task Automation
- Logical Programming with Conditional Statements and Labels
- Pick-and-Place Programming with Sensing Feedback
- Collaborative Robot Use Cases and Human-Robot Interaction
- Force-Limited Control and Safety Features in Cobots
- Robotic Simulation Using Software Platforms
- Virtual Troubleshooting, Testing, and Process Optimization

Industry Recognized Certification Competencies

- Robot System Familiarization
- Jogging and Frame Setup
- I/O Configuration and Control
- Macro Creation and Execution
- Decision-Making and Logical Flow
- Pick-and-Place Programming
- System Integration and Safety Awareness
- Collaborative Robot (Cobot) Implementation
- Human-Robot Collaboration
- Simulation and Virtual Programming

Units - 6 / Labs - 6