



PLC Programming Fundamentals

Course Description

This course introduces participants to Programmable Logic Controllers (PLCs), providing a solid foundation in understanding and programming these essential devices in industrial automation. From a detailed introduction to PLCs to an exploration of internal architecture, terminology and numbering systems, the curriculum covers fundamental aspects of hardware, installation, and hands-on programming in Ladder language. Participants gain skills in interlocks, timers and arithmetic functions, culminating in a hands-on project that consolidates their understanding and skills in PLC programming.

At the end of the course you will be able to:

- Understand the internal architecture of PLCs and their associated terminology.
- Identify and work with different types of controllers and I/O modules.
- Apply wiring principles in PLC installation and connection.
- Become familiar with memory mapping and physical I/O addressing.
- Program in Ladder language, from latching to linear and sequential programming.
- Apply concepts of digital logic, timers and arithmetic functions in PLC programming.
- Develop a final project that demonstrates their ability to apply the fundamentals of PLC programming in practical industry situations.

Main topics

- 1 Introduction to PLCs
 - Definition and types of PLC.
 - Internal architecture
 - Basic concepts and terminology
 - Numbering systems
- 2 Introduction to hardware
 - Controller
 - I/O modules
 - Special modules
 - Communication modules
 - Power supply selection
- 3 Installation and connection
 - General wiring principles
 - Internal circuit of input module
 - NPN and PNP sensors
 - Principle of input wiring.
 - Principle of output wiring.
- 4 Memory map
 - PLC memory layout
 - Physical I/O addressing
- 5 Introduction to programming
 - Ladder language introduction
 - Interlocks
 - Timers
 - Basic arithmetic functions
 - Data movements
 - Basic logic programming
 - Linear and sequential programming
 - Final Project

Contact

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Course features

- Instructor Led 
- Duration: 16 hours 
- Tools and templates 
- Simulated learning 
- Course certification 