



PLC & SCADA ADVANCE TRAINING

PROGRAMMING, MAINTENANCE & TROUBLESHOOTING



WHY WOHLSTANDEDU?

The PLC programming course has been designed by WohlstandEdu Experience Trainer that specialises in technical trainings. This PLC Programming, Maintenance & Troubleshooting training module provides knowledge know-how and technical skills to work with different PLCs.



OVERVIEW

This is an Advance course, which aims to build a good understanding about the PLCs and it focuses on providing the practical aspects of PLC operations, programming, and engineering. The course covers PLC block diagram, architectures, operation, usage, instructions, applications, specifications and hardware selection, configuration and programming, documentation related to URS and FDS, wiring diagrams, installation and commissioning, troubleshooting and maintenance with focus.

A special emphasis on real life implementations, case studies and international standards would ensure participants to correlate the theory with their day to day practice. A brief introduction to hierarchical structure of control systems and PLC communications would help the participants to enhance their exposure related to control pyramid and interface to office automation systems

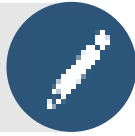


WHAT YOU WILL LEARN

- Understand PLC fundamentals and programming languages
- Work with PLC programming using ladder logic
- Develop skills on PLC instructions
- Have knowledge on PLC Project Engineering, Design and Selection
- Understand PLC communications
- Become expert on PLC installation and commissioning
- Master the art of PLC maintenance and troubleshooting
- Have a brief exposure to hierarchical structure of control system

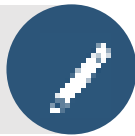


TOPIC 1



- PLC Fundamentals - (Block diagram of PLC's)
- Detail information about PLC components
 - Power supply, CPU, I/Os, Communication bus
- Various ranges of PLC available in Siemens & Rockwell
- Types of Inputs & outputs / Source Sink Concepts
- Wiring of the I/O devices
- Concept of flags
- Scan cycle execution

TOPIC 2



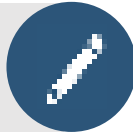
- SIMATIC & RS Logix PLC Functionalities
- Setting up PLC hardware
- Programming software
 - PLC program structure in PLC
 - The instruction set of PLC Programming software
 - Parameters, functions and tools
- CPU configuration, setting parameters and application of several I/O cards using the PLC Programming software

TOPIC 2



- Working online / offline
- Starting PLC system
- Cold, Warm, and Hot Restarts
- Connecting remote I/Os using PLC communication
- Addressing Concepts in PLC's
- Detail information about Organizational Blocks, Function Block, Functions, System Function Block, System Function, Data block
- Creating and Editing PLC programs
- Introduction to Bit Byte and Word Concept
- Programming instructions arithmetic and logical
 - Load /and /or/out / and Read / Write
 - Compare / Add / Sub /And /Or – Blocks
 - Leading edge / trailing edge instructions
 - MOVE block application
- Programming instructions arithmetic and logical
 - Timer Blocks programming
 - Counter Block programming
 - Comment functions
 - Comments in the PLC programs
 - Handling Analog I/Ps
- Conversion shift and jump instructions

TOPIC 3



- Industrial Networking
 - Industrial Data Networks
 - Industrial Ethernet – General
 - EtherNet, Profibus
 - ControlNet, DeviceNet
- Communication via a Multi Point Interface (MPI) & Profibus

TOPIC 4




- Troubleshooting and Maintenance procedure
 - Replacing Digital or Analog Modules
 - Replacing CPUs
 - Replacing the Backup Battery
 - Replacing a Power Supply Module
 - Back up and Restoring programs
 - Fault diagnostics and error handling

TOPIC 5



- Supervisory Control and Data Acquisition
 - Connectivity with the different hardware
 - Communication protocols
 - Communication with PLC
 - Communication with Data Acquisition System
 - Connectivity between software
 - Concept of DDE, DLL, OPC drivers
 - Commissioning the network nodes
 - Troubleshooting the application
 - Fault diagnostics and error handling
 - Sorting communication problems



General



- Pre-Test & Post-Test will be conducted.
- Programming Software such as Simatic Manager & RS Logix Link will be provided before 1 day of the training after successfully payment from the student.
- Any technical issue while installing the software, support will be provided by WohlstandEdu.
- First come fist serve, only 10 Participants in a batch for better understanding.
- Soft copy of certification will be provided by WohlstandEdu
- Course duration: 5 Days – 3 Hr Daily
- Course Fees: USD 300\$ Only



THANK YOU

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