

Course Details

SIEMENS TIA Portal S7-1500 Programming L1 TIA-PRO1 (5 days)

HRDF CLAIMABLE

*Subject to Approval

Requirements

The Totally Integrated Automation Portal (TIA Portal) forms the work environment for integrated engineering with SIMATIC STEP 7 and SIMATIC WinCC.

In this first part of the SIMATIC TIA Portal programming training, we teach you the handling of the TIA Portal, basic knowledge about the structure of the SIMATIC S7 automation system, configuration and parameterization of hardware, and the basics of standard PLC programming. You also receive an overview of HMI, PROFINET IO, and connecting drives.

Objectives

This course provides Participants with a solid base of STEP 7 PLC tools and skills necessary for successful system diagnostics and repair. This course is ideal for environments with high uptime requirements and stable control system programs. Fully functional application programs are used as a baseline for the participant to understand key process flow information, diagnostics tools and repair techniques. Build skills and reduce downtime with this focused automation system troubleshooting course.

Topics

After attending the course, you can do the following:

- Understand the fundamentals of interaction of the TIA components
- Solve simple programming tasks using elementary STEP 7 instructions
- Reliably operate the "TIA Portal" engineering platform
- Program simple plant functions with basic STEP 7 instructions in the ladder diagram (LAD) or function block diagram (FBD)
- Perform simple commissioning of TIA components

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Course Certificate

SIEMENS Certificate will be awarded after the training.

Contact Information

SIEMENS MALAYSIA SDN. BHD. (93008-X)

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Website: www.siemens.com.my/sitrain

Bank Details

Bank Name: Deutsche Bank (M) Sdn Bhd

Bank Account Number : 0020768000

Bank Address : 18th – 20th Floor, Menara IMC 8,
Jalan Sultan Ismail,
50250, Kuala Lumpur

Bank Swift Code : DEUTMYKLXXX

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Day-wise Schedule

Day 1

1. SIMATIC S7 System Family overview
 - Totally Integrated Automation Portal
 - S7-1200 / 1500 Systems
 - TIA concept
 - Programming devices
2. TIA Portal Software
 - Engineering Software
 - Products scope and range
 - Interface of the framework
3. Training Devices
 - Installation and configuration
 - Setup and connection
 - Networking and Addresses

Day 2

4. Devices and Networks
 - PG and CPU connection
 - SIMATIC Manager tools
 - CPU memory reset
 - Memory Card operations
5. PLC Tags
 - Global and Local blocks
 - Data Types and table
 - Editing tags
6. Block Architecture and Block Editor
 - Program Structures & Execution
 - Program Blocks
 - LAD / STL / FBD Editors

Day 3

7. Binary Operations
 - AND, OR, XOR
 - RLO and STAT
 - Troubleshooting
8. Digital Operations
 - Data Types
 - Timers & Counters Functions
 - Program counter & timer
9. Data Blocks
 - Global data blocks
 - Elementary and Complex data types
 - Monitor data block

Day 4

10. Distributed I/O
 - PROFIBUS
 - PROFINET
 - Configure, network and commission
11. HMI Devices
 - Downloading projects
 - Establishing communications
 - Commission
12. Functions Blocks (FB)
 - Programming the Parameter
 - Fault Evaluation of a FB
 - Editing, Adding and Deleting FB

Day 5

13. Organization Blocks
 - Program Blocks
 - Creating new OB
 - Error Obs
14. Exercise
 - Diagnostics
 - Debug simple program errors
 - Program Back-up

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Time-wise Schedule

Day	Time	Topics
Day – 1	09:00 Hrs – 09:20 Hrs 09:20 Hrs – 10:00 Hrs 10:15 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	SIMATIC S7 System Family overview Training Units and Addressing Practical on the above Installation/Maintenance of PLC Practical on the above
Day – 2	09:00 Hrs – 10:00 Hrs 10:15 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	SIMATIC Manager Symbols Hardware Configuration Practical on the above
Day – 3	09:00 Hrs – 10:00 Hrs 10:15 Hrs – 12:00 Hrs 13:00 Hrs – 15:30 Hrs 15:45 Hrs – 17:00 Hrs	Hardware Commissioning Block Architecture and Block Editor Binary Operations Practical on the above
Day – 4	09:00 Hrs – 10:00 Hrs 10:15 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	Digital Operations Introduction to HMI Tags & Monitoring Practical on the above
Day – 5	09:00 Hrs – 10:00 Hrs 10:15 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 16:00 Hrs	Documentation PLC Commissioning Practical on the above Q&A/ Feedback

Break Timings:

10:00 Hrs – 10:15 Hrs	Morning Tea Break
12:00 Hrs – 13:00 Hrs	Lunch Break
15:00 Hrs – 15:15 Hrs	Afternoon Tea Break
17:00 Hrs – 17:15 Hrs	Recess & End of Day