

Course Details

SIEMENS SIMATIC S7-300 Programming Level 1 ST-PRO1 (5 days)

HRDF CLAIMABLE

*Subject to Approval

Requirements

This course is for SIMATIC S7-300/400 PLC users who are involved with developing or sustaining automation systems and their application programs. **PLEASE NOTE: If you are very new to SIEMENS PLC, it is advisable to start with the SIEMENS SIMATIC Service Level 1 (ST-SERV1).**

Objectives

This course is the second in a three part series which builds skills with Siemens STEP7 engineering software in project management, program design and application sustaining. This is an aggressively paced curriculum covering key programming tools, structures, libraries and editors. This course takes a systems approach addressing the S7300 / 400 PLCs, plus basic connectivity and functionality of an HMI and PROFIBUS based remote I/O.

Throughout this course Participants will build or modify a STEP7 project using proper program structuring, documentation and test tools. Various instructions, memory types, blocks and functions will be introduced to provide the participant with solid concepts of structured programming.

Topics

Upon completion of this course, the participant shall be able to:

- Complete a system hardware configuration.
- Build, document, test and troubleshoot a structured STEP7 program.
- Program using the multiple address types.
- Use symbolic addressing.
- Use core application instructions, functions and blocks.
- Program using the processed analog values.
- Generate data blocks.
- Establish connections to an HMI

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Course Certificate

SIEMENS Certificate will be awarded after the training.

Contact Information

SIEMENS MALAYSIA SDN. BHD. (93008-X)

GST Reg No. 000956203008

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e-Pass: [siemens.asia/e-pass_v2/ASEAN](https://www.siemens.com.my/e-pass_v2/ASEAN)

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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Daywise Schedule

Day 1

1. SIMATIC S7 System Family overview
 - Totally Integrated Automation
 - S7-200 / 300 / 400 Components
 - Programming and Comm. Devices
 - STEP7 Overview
2. Training Units
 - Training System Variants
 - Conveyor Model
 - Symbols
3. SIMATIC Manager
 - Project Structures
 - Creating a Project
 - SIMATIC Manager tools
 - Using the Help and Tutorial files
 - Using the Menus and Toolbars
 - Memory Cards
4. Symbols
 - Symbolic Addressing
 - Editor Tools
 - Importing & Exporting
5. Hardware Configuration
 - CPU Properties and Parameterization
 - Hardware Configuration
 - Remote I/O Connections
 - I/O Addressing
6. Blocks
 - Program Structures & Execution
 - Program Blocks
 - LAD / STL / FBD Editors

Day 2

7. Binary Operations
 - AND / OR
 - Contacts
 - Sets & Resets
 - Result of Logical Operations (RLO)
 - Jumps
8. Digital Operations
 - Data Types - Integer, Real, BCD
 - Timers & Counters
 - Accumulators
 - Data Management & Conversions

Day 3

9. Introduction to Profibus DP and HMI
 - Downloading projects
 - Establishing communications
 - Editing tags
 - Control & monitoring
10. Data Blocks
 - Data types and storage
 - Data Blocks (DBs)
 - Arrays and structures
 - Saving, downloading, monitoring

Day 4

11. Functions and Function Blocks
 - Variables
 - Parameter assignable blocks
 - Function Blocks (FB)
 - Block calls
12. Organization Blocks
 - OBs
 - Cold, warm, hot restarts
 - Interrupts
 - Error management
13. Analog Value Processing
 - Analog module addressing
 - Analog signal conversion
 - Resolutions and ranges
 - Scaling values

Day 5

14. Troubleshooting
 - Debug functions & Error categories
 - Diagnostic Tools & CPU Messages
 - Module Information & Monitor Tool
 - Forcing & Cross References
 - Find and Filter
15. Documentation
 - Tools
 - Program Management
 - Memory Cards
 - Project archiving & retrieving

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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 & SIMATIC Manager Symbols & Hardware Configuration Step7 Blocks 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	Binary Operations Practical on the above Digital Operations Practical on the above
Day – 3	09:00 Hrs – 10:00 Hrs 10:15 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	Introduction to Profibus DP and HMI Data Blocks Data Blocks (cont) 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	Functions and Function Blocks Organization Blocks Analog Value Processing Practical on the above
Day – 5	09:00 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 16:00 Hrs	Troubleshooting Documentation Feedback & Valedictory session

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