SIEMENS

S7 Programming 1 - Virtual (SCT-S7OILTIAP1C)

Global Reference

SIMATIC S7 Programming 1 (ST-PRO1)

Type

Virtual Instructor-led Learning

Duration and Continuing Education Units (CEU)

25 Hours (Schedule varies)
2.5 CEUs

Target Group

- Programmer
- Engineer

Short Description

This course is for SIMATIC S7-300/400 PLC users who are involved with developing or sustaining automation systems and their application programs.

This highly engaging, virtual course is the first in a three-part series which builds basic programming skills using Siemens STEP7 software. Students will learn S7 project management, program design and application development. This is an aggressively paced curriculum covering S7 programming with Ladder logic. The basics of programming with Function Block Diagram (FBD), and Statement List (STL) languages are also covered. Key software tools and best practices techniques are taught. Participants employ the Totally Integrate Automation concept by integrating an S7300 PLC, HMI, ET200S remote I/O station and a desktop conveyor system connected by PROFIBUS.

Objectives

- Configure, parameterize, communicate with and commission a Totally Integrated Automation System
- Program, document, test and troubleshoot a structured STEP7 program
- Program using absolute and symbolic addressing
- Use core application instructions to program Organization Blocks (OBs), Function Calls (FCs), Function Blocks (FBs), and library blocks
- Program using binary, digital and analog processing
- Create and use data blocks
- Create and call reusable blocks employing parameter passing techniques
- Cross reference where and how addresses are used, program call structure, and comparing online to offline programs

Content

- Using SIMATIC Manager
- Configuring the Hardware system
- Introduction to Programming
- Basic Troubleshooting Concepts
- Symbolic Addressing

- Data Blocks
- Binary Operations
- Introduction to Statement List (STL)
- Digital Operations in (Lad, FBD, STL)
- Reference Data Tools
- Reusable Blocks
- Analog Value Processing
- Organization Blocks

Recommended Prerequisites

[Introduction to SIMATIC PLCs & Languages with Diagnostics: SCT-S7BADIA](#)

OR

[Introduction to SIMATIC PLCs & Languages with Diagnostics - Virtual: SCT-S7OILBADIA](#)

Note

Throughout this course participants build and manage a STEP7 project from beginning to end, learning proper program structure and documenting. Software diagnostic tools are used for troubleshooting both hardware and code. Various instruction sets, memory areas, program blocks, and libraries are introduced to provide the student with solid concepts of structured programming. This course employs the current adult learning techniques featuring brief lectures followed by multiple engaging, task-based skills completed in a virtual environment that begin early Monday morning and continue all week long. Access to fully functional STEP7 programming software, a virtual conveyor, and exercises are provided through a cloud-based application. Instructors verify student skills and sign off on a task completion list throughout the week. At the end of the week, participants complete an independent project to showcase and reinforce the skills they have learned during the week.

Language

English