SIEMENS

Online Instructor-led Training

PCS7 System Engineering 1 - Virtual

General Information

Course Code: SCT-PCOILSYSE1D
Length: 5 Days - 5 hours per day

Audience

Controls engineers using PCS7 to develop a process system solution.

Prerequisites

- Solid computer skills
- Basic automated controls experience
- Industrial electronics experience

Profile

2.5 CEUs (Continuing Education Credits)

This virtual, instructor led course is designed for controls engineers who are responsible for project design, development and commissioning a PCS7 system. The goals of this course are to aggressively help the student learn a basic system configuration and project design using standard system tools and libraries. This course begins with the definition of a typical project and planning the system architecture. The students will then actively build, test and debug a simple PCS7 process system exploring the Automation Station, Engineering Station and Operator Station engineering environments. Interactive lab exercises are used to build experience with system engineering, process optimization and common troubleshooting. Access to fully functional software, virtual tools, and exercises are provided through a cloud-based application.

Objectives

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

- Define the requirements and components of a PCS7 system solution.
- Configure a Multiproject complete with Component and Plant Hierarchy
- Configure basic Continuous Function Charts using standard system tools and libraries.
- Configure basic Sequential Function Charts using standard system tools and libraries.
- Configure a basic Operator Station configuration using standard system tools and tag interfacing.
- Configure and test basic network communications including, Ethernet and PROFIBUS DP.
- Perform a basic system check out using standard system tools and diagnostics.
- Use the Help, Documentation and On-line tools.
- Perform basic system administration and project management functions.

Topics

1. Introduction
   a. Concept of this course
   b. Road map of this course
   c. Additional documentation
   d. Training equipment
   e. Access to systems of other students
2. PCS 7 Documentation and Online Support
   a. Documents available by PCS 7 Installation
   b. Additional sources of information
   c. Industry Online Support Internet Portal
   d. Working with “mySupport”
   e. Support Request
   f. Forum - the communication platform for Siemens Industry products
3. Requirements and Functional Process Description
   a. In brief - project scenario
   b. Process diagram
   c. Functional process description
   d. Connection to a Signal box (Optional)
4. System Design and Component Specification
   a. PCS7 system overview
   b. Before engineering starts
   c. Automation System
   d. Distributed I/O system
   e. Combined Engineering/Operator system
   f. Networked stations and systems / Industrial Ethernet
   g. Simulation Tools
5. Project setup
   a. Overview about configuration steps for AS and OS
   b. SIMATIC PCS 7 Engineering Toolset
   c. What is a Multiproject?
   d. Initial settings of SIMATIC Manager
   e. Setting up a Multiproject
   f. Language for Display Devices
   g. Archiving and retrieving a project, library or multi project
6. Station and network configuration
   a. Station and network configuration - Principles and relationships
   b. PC Station Configuration
   c. AS Station Configuration in the project
   d. Distributed IO with PROFINET
   e. PROFINET Configuration
   f. The final Download
   g. HW Config - Diagnostics
7. Connection to the process
   a. Component View and Plant View

   c. Basics for charts and blocks
   d. Organization blocks
   e. Run Sequence
   f. Different groups of blocks
   g. Driver Blocks
   h. Trend Display
   i. Dynamic Display
   j. Connection to the Process simulation in this training
8. Basics control functions
   a. Introduction to APL blocks
   b. Textual interconnections
   c. Alarm blocks in PCS 7
   d. Process Object View
9. Basics Operating and Monitoring
   a. General
   b. Plant Hierarchy Settings
   c. OS-AS Connection
   d. Project type
   e. Compilation
   f. Layout
   g. Block Icons and Faceplates
10. Basics Automatic Mode Control
   a. Setting the Auto/Manual mode by program
   b. Sequential control with SFC
   c. Sequences on the OS