Training Center

Digital Factory and Process Industries & Drives

SITRAIN™ THAILAND

Training Course Catalog 2018

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1. Introduction

SITRAIN™ THAILAND

Siemens Industry is committed to quality and excellence. Responding to needs in the local market, the Training Center in Thailand was established in 1998. With assistance from our “parent” training center in Nuremberg, Germany, SITRAIN™ Thailand offers training programs with a wide range of industrial automation and drive technology courses including SIMATIC PLC: SIMATIC S7, TIA Portal, PCS7, WinCC, Simotion and Sinamic.

Training Center in Bangkok:

Charn Issara Tower II, room No. 1&2 on 31st floor, 2922/333 New Petchburi Road, Bangkapi, Huaykwang, Bangkok 10310

Programming Device in class room
2. Course Content

Simatic S7-Programming Courses

1. ST-S7PRO1
SIMATIC S7 Programming 1

Description
This course is directed at users with engineering experience in the fields of configuring, design and commissioning of SIMATIC S7 programmable controllers. The course provides an optimal entry level to the product-specific and in depth supplementary courses.

Objectives/Content
- System overview
- Ability to structure, generate, document and put into operation extensive PLC programs with SIMATIC S7
- Being acquainted with the structure and execution of programs in SIMATIC S7 programmable controllers and the structure of the IEC 1131 automation standard.
- Ability to use the STEP 7 tools for generating, documenting and testing of programs and for troubleshooting, module configuration and parameter assignment.
- Ability to use absolute and symbolic addressing
- Being in a position to evaluate system information of the programmable controller
- Being able to handle data types, data storage and archiving
- Configuring and implementing homogeneous communication links via the MPI interface
- Being acquainted with the basics of the integrated DP-interface.

The knowledge gained on all these aspects is consolidated by practical exercises using the S7-300 programmable controller and a plant model

Prerequisites requirements: Automation background

Duration: 5 days
2. ST-S7STOE

**SIMATIC S7 Troubleshooting**

*Description*

This course is directed at users working in the fields of operation, maintenance and assembly who have already acquired a knowledge of SIMATIC S7 in their particular field of activity. The course focuses mainly on the detection and correction of faults in both hardware and software.

*Objectives/Content*

- Gaining familiarity with the system and program documentation and learning how to use it
- Becoming acquainted with the STEP 7 software for detecting and correcting faults and learning how to use it
- Checking the hardware and software of a system
- Recognizing and eliminating software faults resulting in stop
- Recognizing and eliminating logical software errors, e.g. multiple assignment
- Saving and documenting the program changes made
- Diagnosing program errors using I STACK and B STACK
- Extended test functions
- Troubleshooting in networked programmable controllers
- Program corrections using optional packages

*Prerequisites requirements:* ST-S7PRO1

*Duration* 4 days
TIA Portal SIMATIC Programming 1 (Basic) Course

TIA-PRO1

Course Description / Objective

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 and PROFINET IO.

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

Course Content

- Overview and significant performance characteristics of the SIMATIC S7 system family
- The components of the TIA Portal: STEP 7, WinCC, communication
- Program execution in automation systems
- STEP 7 block types and program structuring
- Binary and digital operations in the function block diagram (FBD)
- Programming of parameterizable blocks
- Data management with data blocks
- Programming organizational blocks
- Test tools for system information, troubleshooting, and diagnostics
- Hardware configuration and parameterization of the SIMATIC S7 modules, a PROFINET IO system (ET-200), a Touch Panel
- Program documentation and saving
- Deeper understanding of contents through practical exercises on the SIMATIC S7-1500 system model

Prerequisites requirements: Automation background

Duration 5 days
Simatic PCS7 Courses Version 8.2

ST-PCS7_P1
SIMATIC PCS7 V 8.2

Description
This course is directed at users with engineering experience in the fields of configuring, design and commissioning of Simatic PCS7. The course provides programming basic PCS7 and understands architecture of the system. The training unit is stand alone system. (One AS one OS/ES)

Objectives/Content
- Managing the project data in the SIMATIC Manager
- Station and network configuration
- Configurator of AS functions in CFC
- Configuration of monitoring and controlling in the OS
- Configuration of sequences in SFC
- User blocks - attributes and visualization
- Syntax rules for SIMATIC PCS 7 engineering

Prerequisites requirements: Automation background

Duration 5 days
Simatic WinCC Course

ST-BWINCCS
SIMATIC WinCC  V 7.3

Description
The course is directed at configuring engineers, commissioning engineers, decision-makers and service personnel. Simple examples help the trainees to obtain the necessary basic knowledge allowing them to use the system quickly and easily for their own applications.

Objectives/Content
- Overview of the WinCC system
- Starting a project, connection of the PLC, var. simulation
- Graphics
- Alarm display, alarm logging
- Curve display, tag logging
- User archives
- Report Designer (demonstration)
- Background processing (demonstration of Global Scripts)
- Openness of the API (demonstration of its structure and uses)
- Practical exercises

Prerequisites requirements: ST-S7PRO1

Duration  5 days
SIMOTION  System and Programming Course

MC-SMO-SYS

Description/Objective

You will learn how to configure and start up the SIMOTION Motion Control system with the associated drives and visualization devices. The course also includes the programming of movement sequences with the help of Motion Control Chart and ladder diagram/function block diagram.

The technologies positioning, synchronous operation, probe, and cam plates are explained and reinforced by means of practice-oriented examples.

The course enables you to use SIMOTION optimally in the automation of production machinery.

The programming course (MC-SMO-PRG) builds on this to deal in depth with the creation of parameterizable blocks.

Content

- System overview of SIMOTION
- Components of SIMOTION
- SCOUT engineering system and option packages
- Hardware platforms
- Motion control technology packages
- Creating a project with SCOUT
- Starting up and optimizing axes
- Programming user programs with MCC (Motion Control Chart) and LAD/FBD
- Runtime system (task system) configuring
- Learning to use tools for fault diagnostics
- Performing practical exercises on training devices

Prerequisites requirements: DR-SNS-SI

Duration 5 Days
SIMOTION Programming

MC-SMO-PRG

Description/Objective

Building on the knowledge gained in the SIMOTION system and programming course, you will learn the advanced programming facilities with Structured Text and Motion Control Chart. The applications for the technologies are reinforced using selected examples on our exercise equipment. On completion of the course, you will be able to create parameterizable blocks such as FCs and FBs with the help of the Structured Text language. With knowledge of the cam plate function, you will be able to parameterize and program cam plate synchronization. This extends your scope for creating programs for your production machine.

Content

- Introduction to creating user programs with Structured Text
- Creating variables and data structures in ST-Units
- Creating re-usable blocks (FCs and FBs)
- Programming commands for motion control
- Creating cam plates with CAM EDIT and using system functions
- Parameterizing and programming cam plate synchronization
- Overview of communication with OPC and UDP
- Practical exercises using application examples

Requirements

SIMOTION knowledge according to the course MC-SMO-SYS

Duration 5 Days
SINAMICS S120 Service And Startup Course

DR-SNS-SI

Who Should Attend: Electrical Maintenance Personnel, Commissioning Engineers, Project and Configuration Engineers. This course is for start-up engineering and service personnel. It provides the technical knowledge and skills necessary for start-up and troubleshooting. An overview of the drive system (hardware and documentation) is presented at the beginning of the course, followed by in-depth discussion of software functions, parameter structure and function diagrams. Hand-on exercises on the training units and the STARTER PC tool allow the course participants to develop job-related skills at a practical level.

Aims & Objectives

The course is designed to give a fundamental introduction to the Sinamics S120

Content

- SINAMICS - System Overview
- Objects, Components and Topology / Configuration “Drive Objekt Servo”
- Control Components
- Power Components / Principle of Operation
- Commissioning with STARTER / Control words / BiCo-technology
- Diagnosis
- Speed Setpoint Channel / Configuration “Drive Objekt Vector”
- Types of Control / Speed Control Loop
- Optimization / Position Control
- Basic Positioner (EPs)
- Drive Control Chart (DCC)
- Communication via PROFIBUS
- drive based Safety Integrated (dbSI)
- Additional Functions: Restart on the Fly, Bypass, Brake Control, Motor Changeover

Prerequisites

A general knowledge of electrical engineering and good PC skills is sufficient for taking part in this course.

Duration 5 Days
SINAMICS G120 Commissioning and service

DR-G120-EXP

**Description/Objective**

In this course, we teach the know-how required for configuring and initial startup of the SINAMICS G120 drive system. Practical exercises using a SINAMICS G120 Training Case are an important component.

On completion of the course, you will have mastered safe handling of the STARTER commissioning tool. This allows you to effectively use different converter functions, optimize closed-loop controls, and thus achieve the greatest possible success when using the SINAMICS G120 system.

**Content**

- Design of the SINAMICS G120 drive system
- Commissioning and parameterization with the STARTER commissioning tool
- Converter functions (flying restart, brake, closed-loop control)
- Data maintenance
- Flexible signal switching with BICO technology
- Safety Integrated functions
- Diagnostics and troubleshooting
- Practical exercises using the training case

**Requirements**

Basic knowledge of electrical engineering

**Duration** 3 Days
3. Course Schedule

Please see the attached file for Training Course Schedule.

Training programs are scheduled at fixed dates during the year. To register, please let us know at least two weeks before course schedule in advance. Course booking will be done by first-in-first order. We reserve the right to postpone the course to a later schedule in case of course fully booking or participant less than 6 people had registered.

On-Site Training
We also provide training on-site at your company premises with Extra Charged. On-site training arrangements should be made at least one month before the starting date of the course. Please contact the training coordinator.

Contact Person
Training Coordination : K. Pattaranan Varisanont  
Tel      : (662) 715-4866  
Fax     : (662) 715-4841, 4861  
Email  : Industrymarketing.th@siemens.com

4. Terms and Condition

Terms and Condition for Scheduled Courses

1. Registration closes when the course is full.
2. Course fees are payable in advance at least one week before the start of the course. Payment can be made by cheque payable to SIEMENS LTD.
3. A fee may be charged if we received a cancellation less than two-weeks before a course start.
4. Course Price includes Coffee Breaks and Lunch.
5. Price is not included Hotel accommodation.

General Condition for Trainee

1. The certificate will be given to the trainee who attends in complete duration for the course only.
2. The trainee, who would like to attend the S7-Programming 1, must have the knowledge of basic PLC.
Registration Channel

SITRAIN only accept training reservation by e-Pass system, therefore it is mandatory for trainees to register e-Pass in advanced.

Registration at :  [www.siemens.asia/e-pass](http://www.siemens.asia/e-pass)

**e-Pass Manual** : [Click Here](http://www.siemens.asia/e-pass)

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**SITRAIN Training e-PASS™**

**Member Registration**

1. Member register notice
2. Input the requested data
3. Confirm the input data
4. Complete registration