

A man and a woman are seated at a desk, working on laptops. The man is pointing at the screen of his laptop, while the woman looks on attentively. The background is a dark blue space filled with glowing green lines and icons, suggesting a global network or digital infrastructure. Icons include stylized human figures, a cloud, a graduation cap, and arrows, all interconnected by a web of lines. The overall atmosphere is professional and high-tech.

SIEMENS

Ingenuity for life

World-class
Industry Training
from SITRAIN India

www.siemens.com/sitrain

SITRAIN – Training For Industry

4	SITRAIN™ Brief Introduction
5	Training Overview
6	USPs of SITRAIN
7	Special Training Kits
8	Major Industry Customers
9	Automation Courses
31	Drives Courses
49	LV Switchgear & Motor Courses
57	Feedback from our customers
58	General Notes & Commercial Terms

SITRAIN™ Brief Introduction

A knowledge advantage: Only today's manufacturer knows the product of tomorrow – and its possibilities

In today's competitive market, a highly skilled workforce is vital for success. However, understanding how to deploy an effective learning strategy is a challenge.

What would you say if a friend tells you he had installed new fire extinguishers in his office and had taken all precautions for fire protection thereby? Yet, he had not thought about taking any preventive measures. Transfer this scenario to your own everyday work. Would you purchase and operate a system without initiating training measures that show how that system can be operated and maintained competently? You decide.

SITRAIN offers you training and knowledge directly from the manufacturer about our products and their possibilities. We train your personnel on training equipment we've developed especially for these products and in our courses we offer numerous practical exercises. This allows participants to try out products and make mistakes.

During this process you benefit not only from our trainers who work in this field and have considerable practical experience, but also from our innovative learning methods. You can view specifically what those methods are and discover additional benefits further to the right.

Worldwide, **SITRAIN** courses are available wherever you need a training course in over 140 locations in over 60 countries.

Since 1980 Siemens has been providing training for customers in the field of Automation & Drives across various locations in India.

Increased productivity: Our learning services integrate best practices and new learning technologies to deliver real business value

Siemens technical learning services provide students with the critical knowledge they need for their job directly from the equipment manufacturer. Our training solutions build the competence to make informed decisions in the daily operation of your plant's automation and drives systems. Employees will achieve increased productivity, while staying up to date with new technologies and best practices. We offer your personnel complete learning solutions and competency management programs.

Your Training benefits at a glance

- Increase effectivity: less effort for configuration and commissioning
- A knowledge advantage: training courses are already available at the time of product market introduction, with hardware and software, appropriate training equipment, and always up-to-date
- Save time and resources: shorter orientation periods when technology or personnel change
- Improve production workflows, reduce down times – thanks to training units in the areas of troubleshooting and fault clearance

More about
Siemens
Industry
Training



Online Booking Process

To explore full range of our offerings check out the link below:

www.siemens.co.in/sitrain



Training Overview

Industrial Training in Siemens has built up more than 200 professional training centers around the world. Here In India, we have 8 training executors located in Navi Mumbai, Panchkula, Chennai, Coimbatore, Thane, Kolkata, Hyderabad & Bhilai.

‘To be at the forefront of quality and technology is our principle’. Each training centre follows uniform quality standard and principle of customer orientation. The training courses enable our Siemens technical expertise and practical skills in the most efficient way so as to acquire the ability of using our products and troubleshooting in on-site products. We provide various options to our customers, from classroom course to on-site training, from standard courses to customized courses and from self learning media to online courses. You may choose the suitable courses according to your level and condition.

Feedback Process – 1. Immediately after program 2. Telephonic Feedback after 15 days

The average feedback is 94.28%

Training Content

We offer training on most of the products and technology:

- SIMATIC Programmable Controller: SIMATIC S7
- SIMATIC NET: Industrial Ethernet, Profibus, AS-interface
- SIMATIC HMI: WinCC, WinCC Flexible
- Process Control System: SIMATIC PCS7
- Drives: SIMOVERT MASTERDRIVES VC/MC, SIMOREG
- DC-Master, MM4, SINAMICS G150/S120
- Motion Control System: SIMOTION
- Low Voltage Switchgear, Power Distribution products, Energy Management, Intelligent Motor control (Smart product): SIMOCODE
- Basic Automation for Switchgear users, basic communication for Power Distribution products
- Process Instrumentation & Mechatronics

Basic knowledge the Trainee should have

- Engineering Background
- Experience of Operating, Maintaining High-Tech Electrical Products
- Basic Knowledge of English Language to understand the English interface of Documentation

Various Course Setup

- Standard course/customized course/ Application Course
- Classroom Training/On -Site Training

Scientific Management and good service

- Agreeable Environment with complete facilities
- Standard training process
- Training Resource Management
- Training Quality Control

Certificate awarded on completion of the course



Training Conducting Method

- Combination of Theory Teaching & Practical Exercises

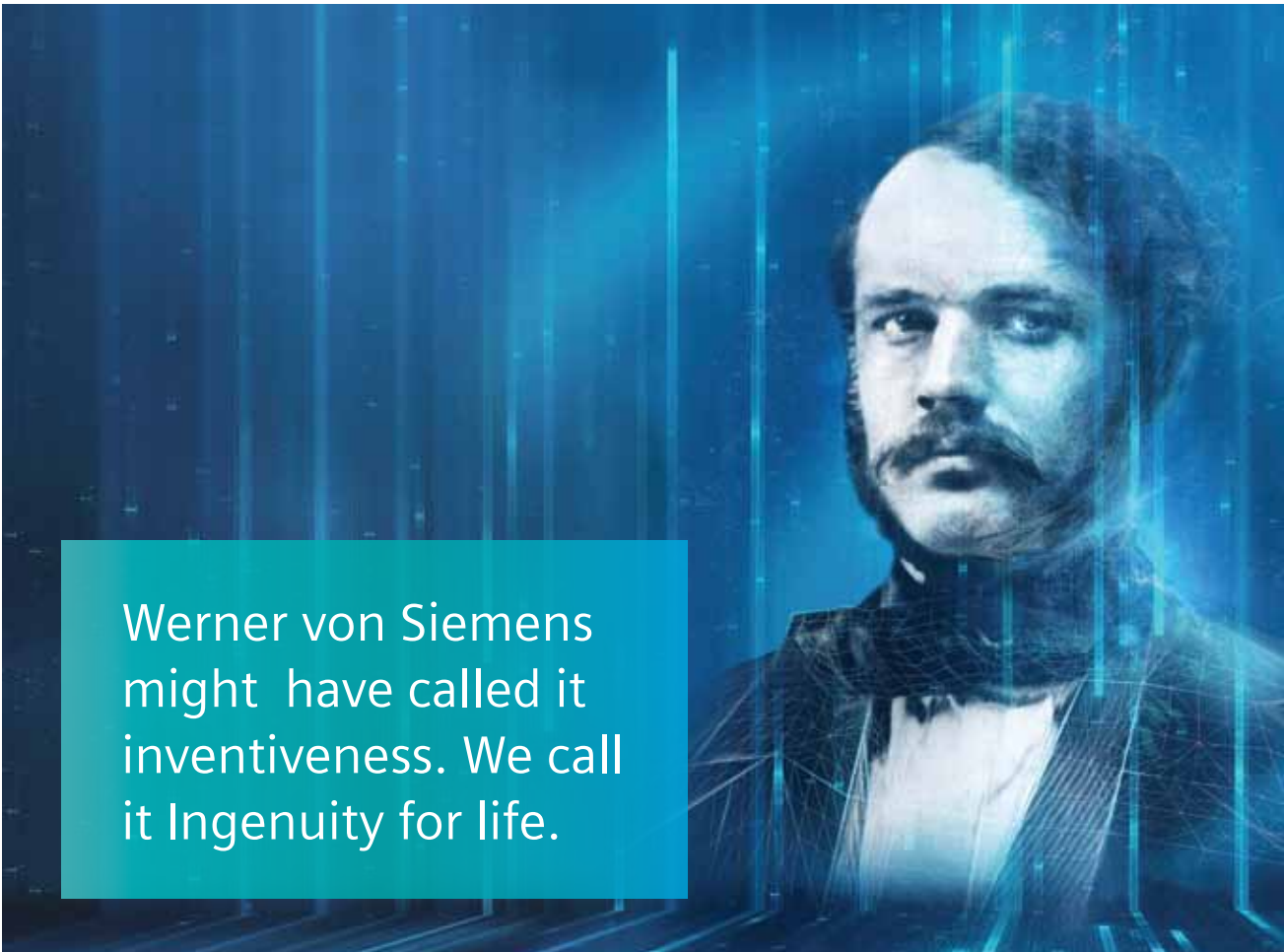
USPs of SITRAIN

Digitalization in Training Process

1. Program selection questioner – entrance tests
2. Hassel free registration process. The industry participants can register themselves for training directly on the SITRAIN webpage through this link www.siemens.co.in/sitrain
3. Invitation/Confirmation from SITRAIN India
4. Web based Training (WBT) is provided to every participant to develop fundamental product knowledge before attending the classroom training
5. Pre & post test examination for self checking the subject development
6. Access the archives of training materials. Participants can download participated training documents/manual from the website
7. After 6 months, an examination to check retention of trained subject will be held.

Systematic approach for skill development

1. Introduction of new programs and training topics from time to time
2. More hands-on training through specially designed kits for individual participants
3. Practical Training directly from the manufacturer with updated features and technology
4. Possibility of course customization offering flexibility in contents, media, location, time & duration
5. Balanced ratio between theoretical and hands-on training
6. Comprehensive range of training courses
7. All training kits use industry products. Customer gets exposure to real industry products
8. German standard documentation with kits. User-friendly documentation, ample illustrations and diagrams.



Werner von Siemens
might have called it
inventiveness. We call
it Ingenuity for life.

Special Training Kits



SIMATIC S7 300



SIMATIC S7 1200



SIMATIC S7 1500



SINAMICS DC Master Drive



SINAMICS G120



SINAMICS S120



SINAMICS V90



ACB



DCS PCS 7



Mechatronic



SIMOCODE



Timer & Relay Kit

Major Industry Customers

- SAIL (10-Plants around the country)
- ONGC (Baroda)
- FORD (Chennai)
- Tata Motors (Pune & Lucknow)
- TATA Steel (Jamshedpur)
- Hindustan Zinc (Pantnagar & Rajashtan)
- Reliance (Jamnagar & Hazira)
- BPCL (Mumbai)
- ITC (Chennai, Sharanpur, Bangalore)
- DIAL (Delhi International Airport)
- Aditya Birla Cement (Mumbai & National)
- HPCL (Vishakapatnam)
- RINL (Vishakapatnam Steel Plant)
- Ultratech Cement (Mumbai)
- BHEL (UP,MP,AP, etc) - Contract
- FORD (Sanand)
- Vedanta (Orissa)
- Hindustan Unilever (Mumbai)
- Mahindra & Mahindra (Nasik & Nagpur)
- TATA Steel (Kalinga-nagar, Orissa)
- ACC-HOLCIM
- UNILEVER (Global Plants)

We train at over 200 locations in more than 60 countries.

You can find your personal contact at www.siemens.com/aspa using the selection are "by Competence: Training" and "by Country".



AUTOMATION

10	SIMATIC S7-1200 with STEP7 V15
11	Networking on Profibus/Profinet with V5.x
12	SIMATIC S7-1500 with TIA V15 Basic
13	SIMATIC S7-1500 with TIA V15 Advance
14	SIMATIC S7-300 with STEP7 V5.x Basic
15	SIMATIC S7-300 with STEP7 V5.x Advance
16	SIMATIC S7-400 with STEP7 V5.x Basic
17	SIMATIC S7-400 with STEP7 V5.x Advance
18	Networking on Profibus/Profinet with TIA Portal V15
19	SIMATIC WinCC (TIA Portal) Professional V15
20	SIMATIC WinCC Explorer V7.x Basic
21	SIMATIC WinCC Explorer V7.x Advance
22	DCS: SIMATIC PCS 7 Basic
23	DCS: SIMATIC PCS 7 Advance
25	SIMATIC Distributed (Machine Safety) Course
26	SIMATIC Fail-safe (Process Safety) Course
27	Digitalization Auto Engineering
28	Digitalization Stand SiVArc
29	Process Instrumentation
30	SMSCP-L1
31	SMSCP-L2



SIMATIC S7-1200 with STEP7 V15

Code: AS-1200

Objectives: Making participants familiar/work with **SIMATIC S7-1200 with STEP 7 V15**, various communication with S7-1200 like Modbus TCP/IP, G120 Integration.

Benefits: After successful completion of training the participant will be familiarized with the features of S7 1200 and its applications. This training will also help them to develop the understanding of hardware and software diagnostics of S7 1200 and networking capabilities of S7 1200.

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- System Overview, PLC Tags, Programming Blocks
- Introduction to HMI & Introduction of 2nd generation HMI
- Troubleshooting & Trace Functionality, Memory card binding

- Web server with user defined WebPages, PID block
- AS-AS Communication, Modbus TCP Communication, MODBUS RTU
- I-device communication, MRP, Introduction to PROFINET
- G120 integration with S7-1200 using Motion Control
- Introduction of Migration from S7- 200 CL to S7-1200

Participant Prerequisite: Basic Knowledge of Automation technology / relay logic

Hardware and Software to be used:

- S71200 kit with HMI panel
- Laptops/ PC systems installed with TIA Portal V15 software

Duration: 5 days, full time

Language: English

Networking on Profibus/Profinet with V5.x

Code: AS-NTW

Objectives: This Course is designed for Engineers working in the field of Automation and not exposed to the field of SIMATIC Net.

Benefits: Participants will be able to configure Profibus – DP Communication for remote I/O's, configure Profibus – FDL Communication between S7 CPU's. Participants will be able to understand communication over industrial ethernet between PLC's and also to control drive through PLC.

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- RS 232 and RS 485 details.
- MPI Communication: GET&PUT and X-SEND & X-RCV
- Profibus–DP: DP-SEND & DP-RCV Blocks, Intelligent Slave
- Profibus-FDL: between CPUs of S7 family
- PLC to PLC communication over Industrial Ethernet
- Drive and PLC communication over Profibus DP network
- Diagnostic Tools in the Software.
- Introduction to PROFINET and Modbus communication

Participant Prerequisite: The participant should be an engineer, knowledgeable about PLC and programming language in STEP 7 V5.6

Duration: 5 days, full time

Language: English

SIMATIC S7-1500 with TIA V15 Basic

Code: AS-1500B

Objectives: Making participants familiar/work with **SIMATIC S7-1500 with STEP 7 V15**, various communication with S7-1500 like remote station and HMI communication.

Benefits: After undergoing this training participants will be able to understand various hardware and software features of S7-1500 PLC. Participants will be able to do the programming of PLC with the use of various instructions. Participants will access PLC through Web browser. Trouble shoot faults & errors and would be able to configure and Perform PLC-Drive Communication.

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- System Overview S71500, ET200SP controller, Compact CPU's, PLC Tags, Programming Blocks
- Advance Programming Option in S7-1500 like Snapshot, Download without re-initialization
- Analog Value Processing

- Introduction to HMI & Introduction of 2nd generation HMI
- Troubleshooting & Trace Functionality
- Web server with user defined web pages
- Intelligent device configuration, remote station communication on PN
- TIA selection tool
- Introduction of Migration from S7-300 from STEP 7 V5.5 to S7-1500 STEP 7 V15
- PLC Drive Communication
- Introduction to optional packages

Participant Prerequisite: Basic Knowledge of Automation technology/relay logic

Hardware and Software to be used:

- S7 1500 kit with HMI panel
- Laptops/ PC systems installed with TIA Portal V15 software

Duration: 5 days, full time

Language: English



SIMATIC S7-1500 with TIA V15 Advance

Code: AS-1500A

Objectives: Making participants familiar/work with **SIMATIC S7-1500 with STEP 7 V15**, various communication with S7-1500 like Modbus TCP/IP, G120 drive Integration.

Benefits: After successful completion of training the participant will be familiarized with Advanced Programming Options, communication functionalities available with S7-1500 PLC such as PLC-PLC communication over industrial ethernet, modbus TCP & RTU communication, PLC-HMI communication. Participants will be able to learn about various HMI functions as alarm configuration. Participants will be able to configure drive using TIA portal and perform PLC-Drive communication, Trouble shoot faults & errors.

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- System Overview S71500, ET200SP controller, Compact CPU's, PLC Tags, Programming Blocks; Multi Instance and Parameter Instance programming methods
- Programming of RTC, jump instructions and using indirect addressing

- Introduction to HMI & Introduction of 2nd generation HMI
- Configure HMI Alarms, Trends, Recipe
- Troubleshooting & Trace Functionality
- Web server with user defined web pages
- CPU-CPU Communication on TCP/IP
- Modbus TCP Communication, Modbus RTU
- G120 communication with S7-1500 using Motion Control
- TIA selection tool

Participant Prerequisite: Basic Knowledge of Automation technology/relay logic and participant should undergo S7 1500 Basic Training.

Hardware and Software to be used:

- S7 1500 kit with HMI panel
- Laptops/ PC systems installed with TIA Portal V15 software

Duration: 3 days, full time

Language: English

SIMATIC S7-300 with STEP7 V5.x Basic

Code: AS-300B

Objectives: Making participants familiar with **S7 300 PLC, work with STEP 7 V5.6** programming software. Communication with drive and remote station on Profibus DP/Profinet network.

Benefits: After successful completion of training the participant will be familiarized with the features of S7 300 PLC and its applications. This training will also help them to develop the understanding of hardware and software of S7 300. Participants will be able to do the programming of PLC with the use of various instructions, trouble shoot faults & errors and would be able to communicate drive through PLC.

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- S7 300 hardware detailed information, protocols, DI/DO module wiring, LED's Explanation, front indicators, terminals

- Structured Programming with industrial logics
- Various blocks such as FC, FB, DB and OB in details
- Analog wiring and programming
- Fault diagnostics, tools in software and through front indicators
- Communication basics: CPU to Remote station on DP or PN
- PLC Drive communication on DP/PN
- Introduction of TIA Portal V15

Participant Prerequisite: Basic Knowledge of Automation technology, relay logic essential but not mandatory.

Hardware and Software to be used:

- S7 300 PLC kit with remote I/O's.
- STEP 7 Classic V5.6 software.

Duration: 5 days, full time

Language: English

SIMATIC S7-300 with STEP7 V5.x Advance

Code: AS-300A

Objectives: Making participants familiar with **S7 300 PLC, work with STEP 7 V5.6** programming software. Complex data types and configuration of R systems.

Benefits: After successful completion of training participants will be able to understand Advanced Programming Options, communicate remote I/O's and configure and use PID. Participants will be able to configure S7 300 Software Redundancy. Trouble shoot faults & errors.

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- S7 300 hardware detailed information, protocols, DI/DO module wiring, LED's explanation, front indicators, terminals
- Structured Programming with industrial logics
- Various blocks such as FC, FB, DB and OB in details

- Information on complex data types, Multi Instance and Parameter Instance programming methods
- Programming of RTC, jump instructions and using indirect addressing
- CP to remote I/O communication on Profibus DP
- Continuous PID controller, Hi-speed counters
- Configure R system

Participant Prerequisite: Basic Knowledge of S7300 and SIMATIC Manager knowledge, knowledge regarding programming language & Practical Exposure of S7-300.

Hardware and Software to be used:

- S7300 PLC kit with remote I/O's. CP-345 is required
- STEP 7 Classic V5.6

Duration: 3 days, full time

Language: English

SIMATIC S7-400 with STEP7 V5.x Basic

Code: AS-400B

Objectives: Making participants familiar with **S7 400 PLC**, work with **STEP7 V5.6** programming software. Configuration of Remote I/Os and Drive on Profibus DP/Profinet network.

Benefits: After successful completion of training the participant will be able to understand various hardware and software features of S7-400 PLC, CPU to remote I/O's communication.

Participants will be able to do the programming of PLC with the use of various instructions, troubleshooting and fault diagnostics and would be able to communicate drive through PLC.

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- S7 400 hardware detailed information, protocols, DI/DO module wiring, LED's explanation, front indicators, terminals
- Structured Programming with industrial logics

- Various blocks such as FC, FB, DB and OB in details
- Analog wiring and programming
- Fault diagnostics, tools in software and through front indicators
- Communication basics:
CPU to Remote station on DP or PN
CP to Remote station on DP or PN
- PLC communication with Drive on DP or PN
- Introduction of TIA Portal V15

Participant Prerequisite: Basic Knowledge of Automation technology, relay logic essential but not mandatory.

Hardware and Software to be used:

- S7 400 PLC kit with remote I/O's. AC Drive for communication.
- STEP 7 Classic V5.6

Duration: 5 days, full time

Language: English

SIMATIC S7-400 with STEP7 V5.x Advance

Code: AS-400A

Objectives: Making participants familiar with **S7 400 PLC**, work with **STEP 7 V5.6** programming software. Configuration of Remote I/Os, Drive and HMI Panel on Profibus DP/Profinet network. Configuring panel using WinCC Flexible 2008 software.

Benefits: After successful completion of this training participants will be able to understand Advanced Programming Options, communicate remote I/O's and configure and use PID. Participants will be able to configure S7 400H System with redundancy.

Participants will be able to configure PLC-Drive Communication. Trouble shoot faults & errors.

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- S7 400 hardware detailed information, protocols, DI/DO module wiring, LED's explanation, front indicators, terminals
- Structured Programming with industrial logics

- Various blocks such as FC, FB, DB and OB in details
- Information on complex data types
- Multi Instance and Parameter Instance programming methods
- Programming of RTC, jump instructions and using indirect addressing
- Continuous PID controller, Hi-speed counters
- Configure H system

Participant Prerequisite: Basic Knowledge of S7400 and SIMATIC Manager knowledge, knowledge regarding programming language & Practical Exposure of S7-400 Controller.

Hardware and Software to be used:

- S7 400 PLC kit with remote I/O's. HMI Panel and AC Drive for communication.
- STEP 7 Classic V5.6, WinCC Flexible software 2008 softwares.

Duration: 3 days, full time

Language: English

Networking on Profibus/Profinet with TIA Portal V15

Code: AS-TNTW

Objectives: This Course is designed for Engineers working in the field of Automation and not exposed to the field of SIMATIC Net.

Benefits: Participants will be able to configure various Profinet networking options like I-Device, Open user communication, Ring topology, Modbus (RTU&TCP) with PLC's as well as HMI networking options like smart client and HTTP communication in HMI

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Introduction to PROFINET communication
- Intelligent device configuration with S7 1500/1200
- Shared Device
- MRP, PN-PN coupler
- Open User Communication with S7 1500/1200
- Modbus RTU, TCP with S7-1500/1200
- OPC UA in S7 1500/1200
- PLC-Drive Communication
- Smart client, HTTP Communication in HMI

Participant Prerequisite: The participants should be Engineers, knowledgeable about PLC and programming language in STEP 7 V15

Duration: 3 days, full time

Language: English



SIMATIC WinCC (TIA Portal) Professional V15

Code: AS-TWINCCB

Objectives: This compact course deals with the configuring of **SIMATIC WinCC V15**. Course will be conducted by means of numerous practical exercises within the environment of SIMATIC S7. On completion of the course, you will have mastered the basic software and will understand the openness. Participants will recognize the interaction with other SIMATIC components and will be able to ensure the availability of the plant.

Benefits: Once you have completed the course, you will be familiar with WinCC Architecture in TIA framework, License info and use of various engineering tools important from engineering and diagnosis point of view. Participants will also know Server Client architecture.

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- System overview of SIMATIC WinCC V15
- Configuring connections to the SIMATIC S7 series.
- HMI Tag Table and Tag Connections, Project creation
- Testing functions with WinCC Simulation
- Graphics Designer, Alarm logging, Tag logging, User Archive
- User Administration option (introduction)
- Introduction to WinCC Advanced V15 & Audit in WinCC Advanced
- Introduction Report Designer for logging (introduction)
- Background processing (introduction of Global Scripts)
- Server Client Configuration in TIA Portal
- Introduction to SiVarc and Prodiag, Cloud Connector, Energy Suite & Energy Manager Pro

Participant Prerequisite: Basic Know how about STEP 7 Professional V15 software is mandatory.

Duration: 5 days, full time

Language: English

SIMATIC WinCC Explorer V7.x Basic

Code: AS-WINCCB

Objectives: This compact course deals with the configuring of **SIMATIC WinCC V7.4**. Course will be conducted by means of numerous practical exercises within the environment of SIMATIC S7. On completion of the course, you will have mastered the basic software and will understand the openness. Participants will recognize the interaction with other SIMATIC components and will be able to ensure the availability of the plant.

Benefits: Once you have completed the course, you will be familiar with WinCC Architecture, License info and use of various engineering tools important from engineering and diagnosis point of view

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- System overview of SIMATIC WinCC V7.4
- Configuring connections to the SIMATIC S7 series.
- Tag Management, Project creation
- Testing functions with variable simulation
- Graphics Designer, Alarm logging, Tag logging
- Create Faceplate
- User Administration option (introduction)
- Introduction of Configuration Studio
- Introduction of Report Designer for logging (introduction)
- Background processing (introduction of Global Scripts)

Participant Prerequisite: The course is designed for Programmers & Commissioning engineers, Service persons, Operators, Maintenance persons. Basic Know how about STEP 7 V5.X software and basic programming instruction is mandatory

Duration: 5 days, full time

Language: English

SIMATIC WinCC Explorer V7.x Advance

Code: AS-WINCCA

Objectives: Making participants familiar with Siemens SCADA advance options. The participants will be able to configure Multi user system.

Benefits: Once you have completed the course, you will be familiar with Multi user system, License info for same and configure advance engineering options in WinCC

Target Group: Developer, Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Introduction to WinCC Architecture & different components.
- Concept of Power Tags, Structures and Indirect Tag, Horn Editor.
- Client-Server and Multi-Client configuration, Server Redundancy

- Time Synchronization, OS Project Editor, Picture Tree Manager
- Web Navigator – Server/Client
- Data Monitor, User Archives
- Channel diagnosis & Life beat Monitoring.
- Integration to STEP 7, Creating WinCC projects through Simatic Manager
- Introduction to WebUx, Audit, Electronic Signature
- Introduction to OPC.

Participant Prerequisite: Knowledge of SIMATIC WinCC Basic V7.4 & STEP 7 V5.x is mandatory.

Duration: 3 days, full time

Language: English



DCS: SIMATIC PCS 7 Basic

Code: AS-PCS7B

Objectives: Making participants familiar with **SIMATIC PCS 7** System.

Benefits: One will be able to understand the following;

1. The basic system architecture of a DCS system with prerequisites of a PCS 7 project for a process plant.
2. The role of SIMATIC Manager PCS 7 software in configuration of different hardwares in system architecture.
3. The detailed working of programming language like CFC, SFC and use of pre-defined blocks from different libraries.
4. The basic function of configuring OS station for monitoring & controlling process, use of Plant Hierarchy and generation of various Block icons and its relevant faceplates.
5. Picture navigation, authorizations and Alarms/Values archiving concept under PCS 7 OS.
6. The complete practical exercises in PCS 7 basic course revolves around a simulated process plant which gives feeling of working on actual plant software commissioning.

Target Group: Engineers in Instrumentation / Electrical / Electronics / Engineering.

Course Contents:

- Introduction to standard architecture of PCS 7 like ES, AS, OS-Server & OS-Clients.
- Introduction to AS Hardware like PS, CPU & CPs. Communication of remote stations with AS.
- Working with SIMATIC Manager in PCS7 fashioned way.
- Creating the Multiproject and Configuring Hardware (AS & OS)

- Working with different views like Component View & Plant View.
- Working with CFC Charts and develop logic using CFC charts & optimization of the charts.
- Working with SFC Charts and develop sequences using SFC charts. Various control modes available with SFC charts.
- Compiling, downloading & testing CFC & SFC charts.
- Compiling Operator Station. Creating process pictures in Graphics editor
- User interface in Process Control mode.
- Working with standard faceplates
- Messages and Trends.
- Mass Data engineering tools like Process Object View, Process Tag Type & Models using Import Export assistant
- Introduction to Time synchronization, Life beat monitoring, Picture tree Manager & User Administration.
- Introduction to OS Project Editor.
- Licensing Concept in PCS 7.
- Introduction of Server-Client architecture.

Participant Prerequisite: Engineers working in DCS controlled plant having knowledge in the area of process automation. Basic Know how about STEP 7 & WinCC Explorer software.

Training Methodology: Explanation, demonstration and hands-on practice.

Duration: 10 days, full time

Language: English

DCS: SIMATIC PCS 7 Advance

Code: AS-PCS7A

Objectives:

ASE: As **SIMATIC PCS 7** Engineer you will learn in this course the potential of the SIMATIC PCS 7-process control software with focus on AS-Engineering. As important topics for advanced SIMATIC PCS 7 Engineers the Advanced Process Library (APL), the configuration of SFC-Types, as well as principles and methods supporting an efficient AS-Engineering are in the center of the course. By practical exercises at training equipment you will put your newly acquired theoretical knowledge into the practice. Through this you increase your learning success. On completion of the course, you will be able to engineer a process automation optimally and efficiently.

OSE: As SIMATIC PCS 7 Engineer you will learn in this course the potential of the SIMATIC PCS 7-process control software with focus on OS configuration and design of graphic objects. As important topics for advanced PCS 7 Engineers the configuration of Single and Multi-Station-OS, as well as principles and methods supporting an advanced graphic engineering are in the center of the course. You will put your newly acquired knowledge of the theory to use in practical exercises on the training equipment which you will work on as if you were in a real plant. This will increase your learning success. On completion of the course, you will be able to achieve optimal design of the window to the process.

Benefits: One will be able to understand the following;

1. The use of Multi user engineering under a Multi-project environment of PCS 7 Software and the role of Master data Library in a Multi-project.
2. Configuration of Fault tolerant AS and new concept of redundant PN IO.
3. Important Controller information using system generated charts.
4. Mass Data engineering using IEA and CMT concept.
5. Creation and use of SFC types in process plants.
6. Detail configuration of different OS architectures like Server-Client, Server-Redundancy, Web-Server, Maintenance-Server etc.
7. Use of OS editors like Life-Beat monitoring, Time Synchronization, Authorization using SIMATIC Logon and other new runtime features of OS.
8. The complete practical exercises in PCS 7 Advance course revolves around a simulated Process plant which gives feeling of working on actual plant software commissioning.

Target Group: Project manager, Project staff programmer, Commissioning engineers, configuring engineers, Service personnel, maintenance personnel.

Course Contents:

ASE:

- Project Overview and Standards - Settings in SIMATIC Manager, HW-Configuration.
- Multiproject Engineering - Structuring Multiprojects, Efficient Engineering, License Management, Modification of Process tags
- Use of Advanced Process Library (APL) - Structures and Signal status, Operating Modes, Protection Modes, Application of Parameter Feature-Bit.
- CFC for Advanced – Forcing, Special Functions in CFC, Behavior when maximum cycle time exceeded.
- Advanced alarm engineering - Generating additional messages, message configuration, managing messages in SIMATIC Manager
- SFC Advanced - Operating State Logic and state changes in SFC, configuration of SFC-Types
- SCL
- Application of APC Library - Overview APC Tools in the PCS7 Libraries and APC-Examples, controller optimization using the PID Tuner

DCS: SIMATIC PCS 7 Advance (Contd.)

OSE:

- ES/OS-PC-Station configuration - Project structure, Basic settings
- OS-Engineering - Multi-Project Engineering & Handling, SIMATIC Logon
- Multi-Station Engineering & Handling
- OS Server Redundancy
- Archiving - Tag and alarm logging, PH-Server & Information Server.
- Web Navigator
- Advanced Graphic Engineering - openness for C, Customized objects and faceplate creation
- Smart Alarm Hiding
- Asset Management with Maintenance Station
- Time synchronization

Participant Prerequisite: Attendance of training course PCS 7 Basic recommended. Basic knowledge of process control engineering. Practical experience in SIMATIC PCS 7 project engineering.

Training Methodology: Explanation, demonstration and hands-on practice

Duration: 10 days, full time

Language: English

SIMATIC Distributed (Machine Safety) Course

Code: AS-SFM

Objectives: Making participants familiar / work with Distributed Safety standards. In this course participant will understand basic difference between Standard & Safety products.

Benefits: After successful completion of training the participant will be having the knowledge regarding the Standards in Safety and information on Siemens Safety Products.

Participants will also be able to understand the Safety wiring Concepts, Safety Programming Standards and can perform the communication of safety controllers.

Target Group: Engineers in Instrumentation / Electrical / Electronics / Engineering.

Course Contents:

- Standard Overview of Safety.
- Product Overview like Simatic Failsafe controller, Fail Safe system for factory automation.
- Safety concept of Distributed Safety.
- Sensor Actuator Interfacing like Sensor /encoder wiring to F-DI module, Actuator interfacing to F-DO & Analog value processing.

- Hardware Configuration like Configuration of S7-300/ ET 200S & Simatic selection tool.
- Training unit Configuration & addressing of S7-300F & ET 200S
- Programming like Blocks of safety program, Structure & Execution of safety program, Creating of F-FC/F-FB & PB Block, Programming guidelines, passivation of F-module principle.
- Exercises & Hands on practice.
- Fail safe communication between two failsafe controllers using DP/DP Coupler
- Response time of F-system.
- Plant Acceptance & Hardware maintenance.
- Exercises & Hands on practice.

Participant Prerequisite: Basic knowledge of Automation technology / relay logic. Know how about SIMATIC STEP 7 and knowledge regarding Programming.

Duration: 3 days, full time

Language: English

SIMATIC Fail-safe (Process Safety) Course

Code: AS-SFP

Objectives: Making participants familiar / work with F-System Safety standards. In this course participant will understand basic difference between Standard & Safety products. Operation & maintenance, Communication & Safety matrix overview.

Target Group: Engineers in Instrumentation / Electrical / Electronics / Engineering.

Course Contents:

- Introduction of S7 F-Systems.
- Overview of S7 F-Systems Machinery & Plant safety.
- F-Systems overview of hardware component.
- Sensor & Actuator Interfacing like Sensor /encoder wiring to F-DI module
- Actuator interfacing to F-DO & Analog value processing.
- Safety mechanism of S7-400 F/FH, Passivation of F-I/O's, Reintegration of F-I/O.

- S7 F-System Configuration like power supply, rack, CPU, parameterization of CPU & configuration of Failsafe periphery.
- S7 F-Systems CFC Basic, Rules for program structure, program Architecture, Runtime sequence, Shutdown groups, compile & Download of charts & validation of F-Program.
- S7-F systems Operation & Maintenance, Trend Display in CFC, Dynamic display & Diagnostic of hardware.
- Safety related CPU-CPU communication.
- Safety Matrix-overview & engineering, components, software requirements, Licenses, maintenance options.

Participant Prerequisite: Basic Knowledge of Automation technology / relay logic. Know how about SIMATIC STEP 7.

Duration: 3 days, full time

Language: English

Digitalization Auto Engineering

Code: DIGI-AUTOE

Objectives: Digital Enterprise, your path to Industry 4.0 - discover your possibilities. Today's technologies are so complex that, in order to keep up to date, it is almost essential for the training to be performed on the software and the associated training devices.

This course gives you an overview of totally Integrated Automation in the Digital Enterprise as your way towards Industry 4.0 and an overview about the interaction of the various software packages, so that you will be able to assess them after completing the course.

The objective of the course is to achieve higher efficiency in the creation of PLC code and HMI visualizations for modular machines. This is achieved by:

The automatic execution of repetitive processes for identical functions

Benefits: After successful completion of this Course Participants will have an Introduction to Digital Enterprise, Standardization of Program, Reducing the engineering time and performing virtual commissioning. Participants will also learn about Automatic Generation & Creation of Visualizations (HMI) based on Program Code which will drastically reduce the Engineering Time and also connection of Energy data.

Participants will be able to access TIA Portal Software Remotely and how Diagnostics / troubleshooting is simplified.

Target Group: Decision makers, Planners, Programmer, Project engineer, System integrators, Configuration engineers, Commissioning engineers

Course Contents:

- Digitalization- Industry 4.0
- Automatic execution of engineering tasks
- Standardization as the basis for digitalization
- Modularization of the machine
- Standardization and storage with the aid of TIA Portal Library
- Practical insight into standardized programming
- Standards in automation
- TIA Portal openness and types of automated code generation
- Hardware and software generation and data exchange with ECAD
- Adaptation of project generator

Participant Prerequisite: Basic Knowledge of Automation technology, Basic knowledge of SIMATIC TIA Portal STEP 7 corresponding to TIA-Portal with S7-1500 and HMI and TIA Portal WinCC Advanced corresponding to TIA-WCCM Course and practical experience in the application of knowledge.

Course Certification: Certificate of participation will be awarded after training.

Hardware and Software to be used:

- Laptops/ PC systems installed with TIA Portal V15 SP1 including softwares with STEP 7 V15 SP1, WinCC Comfort/ Advanced V15 SP1, TIA Openness, TIA SiVarc.

Duration: 5 days, full time

Language: English

Digitalization Stand SiVArc

Code: DIGI-STDSI

Objectives: This Course is Introduction to Digital Enterprise, Standardization of Programming and Automatic generation and Creation of the Visualization.

Digital Enterprise, your path to Industry 4.0 - discover the possibilities.

This course will give you an overview of the advantages and the procedure for cross-process standardization, by which you are well prepared for the challenges of digitization in discrete automation.

This Course will also allow your path towards standardizing the visualization of user interfaces throughout the plant while reducing engineering overhead. You accomplish this with automatic generation and creation of the visualization, based on the program code of the controller and corresponding visualization objects as part of the comprehensive library concepts.

Benefits: After successful completion of this Course Participants will have an Introduction to Digital Enterprise, Standardization of Program, Automatic Generation & Creation of Visualizations (HMI) based on Program Code which will drastically reduce the Engineering Time.

Participants will be able access TIA Portal Software Remotely, Diagnostics / troubleshooting is simplified and is explained in the Training.

Target Group: Decision makers, Planners, Programmer, Project engineer, System integrators, Configuration engineers, Commissioning engineers

Course Contents:

- Introduction of Digitalization i.e. brief information regarding all 7 User Scenarios with Demo applications

- Standardization- on the way to digitalization which is a backbone for automatic execution of engineering tasks
- Benefits of standardizing the PLC software
- Library concept in TIA Portal
- Versioning of the stored PLC blocks
- Versioning of the HMI faceplates
- Possibilities of implementing a standard
- Opportunities for implementing a standard
- Introduction to SIMATIC Visualization Architect - SiVArc
- Generating objects and screens in HMI automatically
- Dynamizing objects in HMI
- Positioning objects in HMI
- Reusing library objects in TIA
- Introduction to Pro-Diag, SIMATIC Energy Suite & TIA Cloud Connector

Participant Prerequisite: Basic Knowledge of Automation technology, Basic knowledge in SIMATIC TIA Portal STEP 7 corresponding to TIA-Portal with S7-1500 and HMI and TIA Portal WinCC Advanced corresponding to TIA-WCCM Course and practical experience in the application of knowledge.

Course Certification: Certificate of participation will be awarded after training.

Hardware and Software to be used:

- Laptops/ PC systems installed with TIA Portal V15 SP1 including software's with STEP 7 V15 SP1, WinCC Comfort/Advanced V15 SP1, TIA Openness, TIA SiVArc.

Duration: 3 days, full time

Language: English

Process Instrumentation

Code: AS-PI100

Objectives: The course is aimed at customers who would like to use the expanded functionality of SIMATIC PDM, Field Instruments.

Target Group: Field technicians, Process Design Engineers & Service Providers active in the field of Instrumentation.

Course Contents:

Pressure Transmitter

- Overview of the various pressure measurement technologies
- Overview of the Siemens made pressure measurement portfolio
- Unique features of Siemens made pressure transmitters
- Hands on training for configuration, commissioning and troubleshooting

Temperature Transmitters

- Overview of the various temperature measurement technologies
- Overview of the Siemens made temperature measurement portfolio
- Unique features of Siemens made temperature transmitters
- Hands on training for configuration, commissioning and troubleshooting

Electropneumatic Positioners

- Overview of the Siemens made Electropneumatic Positioners
- Unique features of Siemens made Electropneumatic Positioners
- Hands on training for configuration, commissioning and troubleshooting

Level Transmitters

- Overview of the various level measurement technologies
- Overview of the Siemens made level measurement portfolio (Ultrasonic, Radar, Capacitance)
- Unique features of Siemens make level transmitters
- Hands on training for configuration, commissioning and troubleshooting

Flow Transmitters

- Overview of the various flow measurement technologies
- Overview of the Siemens made flow measurement portfolio (Mag Flow, Mass Flow, Ultrasonic Flow)
- Unique features of Siemens made flow transmitters
- Hands on training for configuration, commissioning and troubleshooting

Participant Prerequisite: Knowledge of Process and Field instruments.

Duration: 4 days, full time

Language: English

Siemens Mechatronic Systems Certification Program (SMSCP)

Assistant / Level 1

Code: SMSCP L1

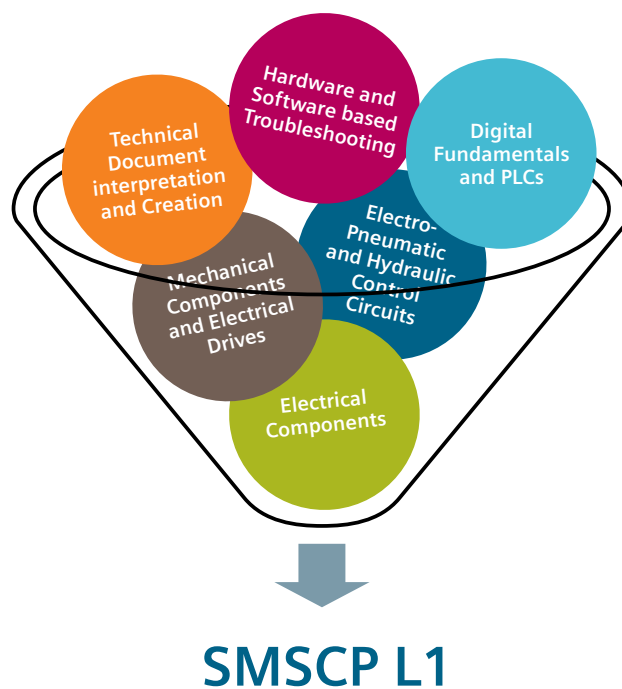
Description:

- Siemens Certified Mechatronic Systems Assistants understand the full system.
- View the components or devices in terms of their roles within the system, and work to keep the system running at maximum capacity.
- Because the individual components or devices are viewed as "black boxes" in this certification level, they will not be responsible for carrying out repairs of defective devices. However, they will be able to identify correctly where malfunctions are occurring.

Job Role post certification:

- Localize, identify causes and sources, correct where possible and/or document malfunctions to be passed on to the appropriate experts for resolution, or (where appropriate) exchange or replace defective components
- Recognize potential or impending malfunctions and
- Recognize potential or impending malfunctions to keep the production line functioning and to prevent production loss
- Understand and explain mechatronic subsystems in a complex system
- Read, understand and create technical documents, reports and outlines specific to the system
- Understand and implement safety regulations required for operation of a Mechatronic system

Course Content:



Participant Prerequisite: Diploma/Degree students in Electrical/ Electronics / Electronics & Telecommunication / Mechanical / Instrumentation / Production Engineering.

Duration*: 18 / 12 Days

*Based on knowledge/competency level of participants

Siemens Mechatronic Systems Certification Program (SMSCP)

Assistant / Level 2

Code: SMSCP L2

Description:

- Siemens Certified Mechatronic Systems Associates function as highly skilled technicians who can work with modules and components in complex mechatronic systems as well as be able to assess and analyze the system as a whole.
- Manage, investigate, repair and troubleshoot mechatronic systems with the aim of operational efficiency and cost and process control work at production facilities, workshops, or in service sites that use complex mechatronic systems.

Job Role post certification:

- Deriving and determining parameters for mechatronic systems and system elements
- Measuring, interpreting and analyzing electrical, PLC/ microcontroller and mechanical values
- Performing scheduled and preventive maintenance systematically and intelligently make repairs
- Installing, implementing and modifying software tools used in mechatronic systems with programming mechatronic modules and systems, especially PLCs
- Implementing PLC networks, including configuration and data transfer using bus systems and analyzing system logs
- Incorporating relevant technical literature into understanding of system operation to use this information to propose procedural and operational changes
- Observing and incorporating safety standards;
- Applying knowledge of process control technology, including all regulator types
- Observe, follow, and influence cost control and process efficiency procedures

Course Content:

SMSCP L2

Process control technologies

Introduction to Totally Integrated Automation (TIA)

Automation systems

Motor control

Mechanics and machine elements

Manufacturing processes

Participant Prerequisite: Diploma/Degree students in Electrical/ Electronics / Electronics & Telecommunication / Mechanical / Instrumentation / Production Engineering.

Duration*: 18 / 12 Days

*Based on knowledge/competency level of participants

DRIVES

34	Basic course on AC/DC Drives
35	Basic AC-Drives with MM4 Maintenance
36	SINOTION Basic
37	SINOTION Advance
38	SINAMICS S120 Basic
39	SINAMICS S120 Advance
40	SINAMICS S120 Drives Safety Functions
41	SINAMICS Perfect Harmony GH180
42	SINAMICS G120 With Starter
43	SINAMICS G120 With TIA Portal
44	SINAMICS G130 / G150
45	AC Drive: SIMOVERT Masterdrive Vector Control
46	SINAMICS V20
47	SINAMICS V90
48	SIMOREG DC Master 6RA70
49	SINAMICS DC Master 6RA80
50	Application Based Crane Training



Basic course on AC/DC Drives

Code: DR-BDT

Objectives:

The participants:

- will have a basic or fundamental knowledge of various DC/AC Variable speed drives
- will know about the product specifications, range, hardware / constructional details and features of the product

Benefits: After successful completion of this training, you will be able to perform drive start-up and parameterize drive for different configurations including use of programmable digital and analog inputs and outputs

Target Group: Users, Commissioning / Service / Maintenance / Fresh Engineers

Course Contents:

- Brief Basic Power Electronics (including Thyristors, Power-Transistors & IGBTs).
- DC Motor Basics (construction, principle of operation, T-N Characteristic etc).
- DC Drives Basics (Block diagram, 1Q-4Q principle of operation, T-N Curves etc)
- Selections, calculations & applications of typical DC drives.

- Siemens DC Drives (6RA80) - Ratings, Specs, features, options & applications.
- AC Motor Basics (construction, principle of operation, T-N Characteristic etc).
- AC Drives Basics (Block diagram, 1Q-4Q principle of operation, T-N Curves etc)
- Selections, calculations & applications of typical AC drives.
- AC Drives (Sinamics V, G & S) - Ratings, Specs, features, options & applications.
- MV Converter Basics & types (Voltage, Current Source & Cyclo-converters)
- Siemens MV Converters (Sinamics GM / GL, Sinamics SM / SL)
- Sinamics Perfect Harmony GH180 Drive
- Selection, configuration & applications of MV Drive systems
- Hands on practice on DC and AC drive

Participant Prerequisite: Engineers in Electrical / Electronic Engineering with Power Electronics Background

Duration: 5 days, full time

Language: English



Basic AC-Drives with MM4 Maintenance

Code: DR-MM4

Objectives: This course is designed for Engineers and maintenance technicians who are not exposed to digitally controlled AC drive technology and further needs to work with Siemens made AC Drive MM4xx.

Benefits: After successful completion of training participants will be capable of troubleshooting, commissioning & maintenance job

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Need of Variable Frequency Drive
- Types of Motor, Basics of AC Motor, speed variation of AC motors, reversal & braking
- Detailed Block diagram of AC Drive
- Inverter principle, PWM technique and power switching devices
- Specifications, range, features and hardware details of Micromaster MM4xx
- Block diagram of the product, terminal details
- Parameter structure and quick commissioning procedure
- BICO technology, working with programmable binary and analog inputs and outputs
- Control and status word

- Using BOP, AOP
- Set point channel
- Signal flow - Various control modes for MM4xx and principle of vector control
- Using various Data sets – CDS, DDS
- Different types of braking methods
- Special functions - Automatic restart, Flying restart, Vdc max / min controller
- Using Free Function Blocks
- Drive Monitor and STARTER demonstration and practice
- Communication capabilities of MM4xx
- Fault diagnostics
- Replacement of different boards of Fx / Gx series
- Periodic maintenance steps
- Cold testing of AC drive
- Forming of Capacitors
- Hands on practice

Participant Prerequisite: Engineers in Electrical / Electronic Engineering with Power Electronics Background

Training Methodology: Explanation, demonstration and hands-on practice

Duration: 5 days, full time

Language: English



SIMOTION Basic

Code: DR-SIMOBAS

Objectives: 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.

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

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

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Need of Variable Frequency Drive
- Types & Basics of Motor, speed variation of AC motors, reversal & braking
- Difference between Induction Motor & Servo Motor
- Product overview/portfolio of Siemens Servo motors
- Various feedback systems for Speed & Position feedback
- Block diagram of Drive System
- Introduction to Product Variants (Sinamics-G/Sinamics-S/ Sinamics -V)

- Basic hardware components of Sinamics-S system & their details & specification
- Topology comparison
- Simotion System & its hardware platforms
- Details of hardware components of Simotion-D system
- Software Components of Simotion
- Creating Project with SCOUT
- Start Up – Axis Configuration & testing with SCOUT
- Programming with LAD/FBD
- Programming with MCC
- Run time licensing
- Fault diagnostics (Simotion & S120)
- Introduction to Remote Diagnostics using web server
- FW Upgrading
- Optional Hardware Components

NOTE: Hand-on practice will be on Simotion-D controllers.

Participant Prerequisite: Participant should have basic knowledge on servo system or S120 Basic and S120 Advance training should be attended.

Duration: 5 days, full time

Language: English

A photograph of a complex industrial machine, likely a printing press or textile loom, with various mechanical components and a blue overlay. The overlay is a semi-transparent blue rectangle that serves as a background for the title.

SIMOTION Advance

Code: DR-SIMOADV

Objectives: Building on the knowledge gained in the programming course, you will learn the advanced programming facilities using TIA-SCOUT with Structured Text and Motion Control Chart.

The applications for the technologies are reinforced using selected examples on our exercise equipment.

Benefits: 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.

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Creating Project with SCOUT & TIA SCOUT
- Start Up – Axis Configuration & testing with SCOUT
- Programming with MCC
- Introduction to Programming with ST
- Creating Functions, Function Blocks & Libraries with ST
- Program locking with Scout.
- Simotion Execution System
- Introduction to Gearing
- Introduction to Camming, creating CAMs with CAM EDIT
- Communication of Simotion with ET stations & HMI.

NOTE: Hand-on practice will be on Simotion-D controllers.

Participant Prerequisite: Simotion Basic should be attended.

Duration: 5 days, full time

Language: English



SINAMICS S120 Basic

Code: DR-S120BAS

Objectives: In this course you will learn the procedure at commissioning step by step. You can handle parameter setting and data saving with the software STARTER. By a correct parameter setting you support the reliable operation of the entire plant.

Benefits: After the course you can put the converter system SINAMICS S120 efficiently into operation. You can adapt the parameters of the closed-loop controller to the respective application and use the diagnostic tools in case of a fault.

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Design and functional principle of the converter system SINAMICS S120
- Control unit, line infeed and motor modules
- Motors, encoders and interfaces
- Block diagram of Drive System
- Parameterization, data backup and diagnostics using Software STARTER:
- Online connection via PROFIBUS and Ethernet

- Project structure: drive objects and drive components
- Various Function Modules in S120
- Automatic Optimization
- Using various Data sets – CDS, DDS
- Operation of drive with speed control
- Sinamics Compact Flash structure
- Licensining of Sinamics S120 system
- Sinamics S120 & PLC (S7 300) over Profibus
- Fault Diagnostics with Trace in Starter & other software / hardware options
- Free Function Blocks
- Project Backup
- FW & Project Upgradation
- Introduction to Web server functionality with S120
- Hands on practice on demo kit.

Participant Prerequisite: Engineers in Electrical / Electronic Engineering with Power Electronics Background

Duration: 5 days, full time

Language: English

A photograph of a Siemens SINAMICS S120 Advance drive system. The unit is a large, industrial-grade device with a grey metal enclosure. On the left side, there are two blue SINAMICS modules with yellow warning labels. To the right of these modules is a large, circular, red and blue gear-like component, which is part of the drive's internal mechanism. The text 'SINAMICS S120 Advance' is overlaid in white on a teal background at the bottom of the image.

SINAMICS S120 Advance

Code: DR-S120ADV

Objectives: In this technology course, you will learn how you can use integrated position control for positioning. You will create flexible function extensions with Drive Control Chart DCC.

Benefits: After the course, you will know these drive system function extensions. You can commission the drive for demanding and complex applications and use the possibilities for the STARTER PC program for efficient work.

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Position control and basic positioner
- Configuration and commissioning
- Operating modes: Referencing, setpoint setting and positioning block
- Drive Control Chart DCC

- Creation of DCC programs
- Using block libraries
- Diagnostics using reference data and online test
- Communication over profibus/Profinet with S7 300 & S7 1500
- Drive HMI direct communication
- Drive to Drive communication over Sinamics Link.
- Drive to Drive communication over drive CLIQ (open application link).
- Practical exercises on training equipment with SINAMICS S120

Participant Prerequisite: Participants should attend S120 Basic course.

Duration: 5 days, full time

Language: English



SINAMICS S120 Drives Safety Functions

Code: DR-S12SAF

Objectives: In this course you learn the handling of drive based safety functions. You know applications of the different functions and you can parameterize them.

Benefits: Therefore you use the benefits in comparison with a conventional safety technology, like reduced cabling or faster commissioning of identical machines.

In the course you get to go through all steps for the implementation of the safety functions until the final acceptance report.

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

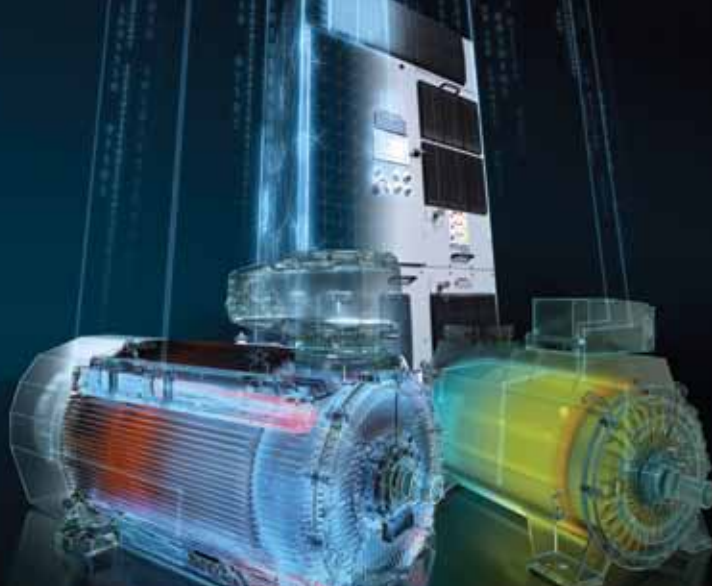
- Basic hardware components of Sinamics-S system & their details & specification.
- Topology comparison.
- Fundamentals, standards and regulations of Machine Safety.
- Procedure of risk assessment.
- Performance Level (PL) and Safety Integrity Level (SIL).
- Safety Evaluation Tool (SET) for the evaluation of PL and SIL.

- Information about safety functions available in Sinamics family.
- SINAMICS S120 Safety Integrated Basic Functions and Extended Functions.
- Control of the drive integrated Safety Functions via. Terminal Module TM54F and DRIVE-CLiQ. SIMATIC F-CPU and PROFIsafe.
- Effect of the settings of the closed-loop control and the kinetic energy of an axis on the safety functions.
- Execution of the acceptance test and preparation of the acceptance report.
- Licensing and diagnostics.
- Practical exercises on training kits with SINAMICS S120, TM54F and SIMATIC F-CPU.

Participant Prerequisite: Knowledge of Sinamics S120 system according to the course DR-S120. For the topic PROFIsafe knowledge of SIMATIC S7 is useful.

Duration: 3 days, full time

Language: English



SINAMICS Perfect Harmony GH180

Code: DR-GH180

Objectives: This training course covers operating and servicing **SINAMICS PERFECT HARMONY GH180** drives. You will understand design and function of components and different control boards used within perfect Harmony.

Benefits: You will understand the functional concept and the control structures. You will parameterize the drive, diagnose its status and analyse its function using the integral cabinet control panel, the TOOL SUITE PC tool and the DEBUG tool.

Target Group: Users / Commissioning / Service / Maintenance Engineers

Course Contents:

- Overview of AC drive and introduction to MV drive system
- Introduction to Product Variants
- Design and function of components used within Perfect Harmony
- Power Topology, cell based technology, concept of step PWM
- Hardware Identification
- Introduction to DCR (NxG, NxGII, NxG PRO)
- Introduction & Function of different boards
- Location of various components in cabinet

- Fast Cell bypass option
- Drawing Reading & location of component
- Operation and parameterization Keypad (HMI)
- Introduction to Tool suite software
- Programming-Compiling SOP
- Command Generator & Control Modes
- Startup Procedure
- Personal Safety
- ProToPS
- Up/Down Transfer
- Dual Frequency Braking
- Compact Flash structure
- Taking Project Backup and Downloading project
- Analyzing alarm and fault messages, Using Trace function
- Replacement power cells and spare parts
- Hands on practice on MV drive

Participant Prerequisite: Basic knowledge and experience with low voltage or medium voltage electrical drives.

Duration: 5 days, full time

Language: English

A photograph of two men, one with glasses and a blue shirt, the other with long hair and a yellow sweater, working together on a SINAMICS G120 inverter. They are in a workshop setting with a laptop and other equipment visible. A teal banner is overlaid on the bottom of the image.

SINAMICS G120 With Starter

Code: DR -G120

Objectives: SINAMICS G120 allow the variable-speed operation of induction motors to drive pumps, fans, conveyor systems and many other machines. This course shows you how to handle the SINAMICS G120 inverter.

Benefits: After the course you will be able to correctly commission the inverter and adapt it to address the particular application. You will know suitable inverter functions and parameter settings for a wide range of applications. You can make a data backup, and taking the appropriate measures when faults occur.

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Design and principle of operation of the SINAMICS G120 inverter with:
- Control Unit CU
- Power Module PM
- Parameterization, data backup and diagnostics with:
- BOP-2 and IOP operator panels
- Starter PC tool
- Setpoint channel and closed-loop control
- Control signals and signal interconnections
- Communication with PLC.
- Inverter functions
- Diagnostics
- Practical exercises using the training device.

Participant Prerequisite: Engineers in Electrical / Electronic Engineering with Power Electronics Background

Duration: 5 days, full time

Language: English



SINAMICS G120 With TIA Portal

Code: DR-G12TIA

Objectives: **SINAMICS G120** allow the variable-speed operation of induction motors to drive pumps, fans, conveyor systems and many other machines. This course shows you how to handle the SINAMICS G120 inverter.

Benefits: After the course you will be able to correctly commission the inverter and adapt it to address the particular application. You will know suitable inverter functions and parameter settings for a wide range of applications. You can make a data backup, and taking the appropriate measures when faults occur.

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Design and principle of operation of the SINAMICS G120 inverter with:
- Control Unit CU
- Power Module PM
- Parameterization, data backup and diagnostics with:
- BOP-2 and IOP operator panels
- TIA Start drive PC tool
- Setpoint channel and closed-loop control
- Control signals and signal interconnections
- Inverter functions
- Diagnostics
- Practical exercises using the training device.

Participant Prerequisite: Engineers in Electrical / Electronic Engineering with Power Electronics Background

Duration: 4 days, full time

Language: English



SINAMICS G130 / G150

Code: DR-G130

Objectives: Making participants familiar with Siemens made AC Drives: **SINAMICS G130 / G150** The participants should be able to wire and power the drive, parameterize the drive for different requirements, using operator interfaces, understanding the Engineering concepts, commissioning steps and fault diagnostics in the Drive.

Benefits: After the course you will be able to commission the converter and make changes to the parameterization. In case of faults, you can reduce downtimes by analyzing the faults and their associated causes, and you can replace faulty components.

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Overview of SINAMICS G130/G150
- Commissioning and diagnostics with:
 - Advanced Operator Panel AOP30
 - STARTER PC tool
- Design of the converter and electrical cabinet

- Setpoint channel, closed-loop control and trace function
- Signal interconnection and BICO technology
- Communication through PROFIBUS
- Handling and using function diagrams and circuit diagrams
- Function of modules and options
- Diagnostics and troubleshooting, handling spare parts
- Replacing modules and power blocks
- Practical exercises at converter cabinet units:
 - Commissioning
 - Diagnostics and data backup
 - Replacing components

Participant Prerequisite: Engineers in Electrical / Electronics Engineering with basic working Knowledge of AC Drives.

Training Methodology: Explanation, demonstration and hands-on practice

Duration: 6 days, full time

Language: English



AC Drive: SIMOVERT Masterdrive Vector Control

Code: DR-MDVC

Objectives: This course is designed for Engineers and maintenance technicians who are not exposed to digitally controlled AC drive technology and further need to work with Siemens made AC Drive Master Drive VC

Benefits: After this training participants will be capable for troubleshooting, commissioning & maintenance job

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Product Pallet- Master Drives
- Hardware Details and Specifications
- Block Diagram and Power Connections
- Control Connections and Terminal Details- CUVC
- BICO Technology and Flexibility
- Start-Up for Open Loop V/f Control Mode
- Parameter Structure: Function Data Sets, Motor Data Sets, BICO Data Sets and reading of Function Diagram

- Working with Programmable Inputs and Outputs
- Control Words and Status Words
- Set-point and Actual value Channel
- Closed Loop Speed Control Configuration
- Torque Controlled Drive Configuration
- Introduction to Drive Monitor software and parameterization / control through PC.
- Special Functions like Automatic Restart, Kinetic Buffering, Flexible Response, DC braking, Synchronization.
- Free Function Blocks
- Introduction only - communication capabilities of MASTERDRIVE
- Fault Diagnostics – Procedure
- Engineering Concepts

Participant Prerequisite: Engineers in Electrical / Electronic Engineering with Power Electronics Background

Duration: 6 days, full time

Language: English



SINAMICS V20

Code: DR-V20

Objectives: This course shows you how to handle the **SINAMICS V20** inverter using operating panel and smart access module.

Benefits: After the course you will be able to commission the inverter. You know suitable inverter functions and parameter settings for wide range of applications. You can make data backup and taking appropriate measures when faults occur.

Target Group: Users / Commissioning / Service / Maintenance Engineers

Course Contents:

- Basics of AC Motor, speed variation of AC motors, reversal & braking
- VFD working principle, PWM technique and power switching devices
- Block diagram of AC Drive
- Specifications, range, features and hardware details of SINAMICS V20
- Getting familiar with the drive
- Block diagram of the product, terminal details
- Understanding of Operator panel functions, key operation & status LEDs

- on the drive
- Parameter structure and quick commissioning procedure
- Working with Connection & Application Macros
- Details of various advanced Functions
- Using optional accessories – Parameter loader, External BOP interface, MMC card,
- I/O Extension module and Smart Access Module
- Concept of CDS, DDS
- Details on Free Function Blocks
- Firmware upgradation
- Communication capabilities with PLC (S7 1200) on Modbus
- Application examples
- Fault diagnostics
- Hands-on practice

Participant Prerequisite: Basic knowledge of electrical engineering.

Duration: 3 days, full time

Language: English



SINAMICS V90

Code: DR-V90

Objectives: This course shows you how to handle the **SINAMICS V90** inverter using operating panel and V Assistant software.

Benefits: After the course you will be able to commission and control the drive with different control modes. You will understand positioning concepts and be able to use them for different applications. You can create data backup and take appropriate measures when faults occur.

Target Group: Users / Commissioning / Service / Maintenance Engineers

Course Contents:

- VFD working principle and getting familiar with the drive
- Block diagram of AC Drive
- Specifications, range, features and hardware details of SINAMICS V90
- Block diagram of the product, terminal details
- Understanding of Operator panel functions, key operation & status LEDs on the drive
- Parameter structure and quick commissioning procedure

- Different control modes – speed control, Torque control, Position control
- Basics of Positioning
- Commissioning and monitoring the drive using software Sinamics V Assistant
- Controlling the drive with different control modes
 - a) Internal Speed control
 - b) Internal position control (IPos)
 - c) Pulse train input (PTI) – Using S7 1200 PLC
- Different positioning tasks using Motion control library in S7 1200 PLC
- Electronic gear ratio
- Real time tuning
- Application examples
- Fault diagnostics
- Hands-on practice

Participant Prerequisite: Basic knowledge of electrical engineering and Servo system.

Duration: 3 days, full time

Language: English



SIMOREG DC Master 6RA70

Code: DR-DC70

Objectives: This course is designed for Engineers and maintenance technicians who are not exposed to digitally controlled DC drive technology and further needs to work with Siemens make DC Drive 6RA70.

Benefits: After the course you will be able to reliably and efficiently commission the DC converters and adapt parameter settings to address the various applications. You can optimize the controller settings and in the case of faults, use diagnostic resources.

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Basics Of DC Drive:-
 - a) Basic DC Motor equations
 - b) Three phase controlled converter Thyristor accessories
 - c) PI Controller
 - d) Block diagram of DC Drive
 - e) Braking & Reversal/ Single & Multiquadrant Drive
 - f) Optimization
 - g) Speed variation techniques
- Introduction to SIMOREG DC MASTER 6RA70
- Hardware Details
- Block Diagram and Terminal Details
- Basic Start-Up Procedure
- Thyristor Checking & Automatic Optimisation
- Working with OP1S

- BICO Technology, Binary Inputs & Outputs
- Analog Interfaces
- FDS & BDS
- Copying Of Data Sets
- Introduction to Drive Monitor Software
- Set -Point Channel
- Control & Status Word
- Ramp Function Generator
- Motorised Potentiometer
- Speed Controller
- Armature Current Controller
- Manual Optimisation
- EMF / Field Controller
- Field Weakening
- Parallel Configuration
- Parameterisation of Free Function Blocks
- Dynamic Overloading
- Fault Memory and Fault Diagnostics
- Typical applications

Participant Prerequisite: Engineers in Electrical / Electronic Engineering with Power Electronics Background

Duration: 6 days, full time

Language: English



SINAMICS DC Master 6RA80

Code: DR-DCM

Objectives: This training course shows you how to adapt the parameter settings for the converter in line with the application and DC motor. It also gives you the opportunity to broaden your theoretical knowledge by means of exercises carried out on special training equipment.

Benefits: Once you have completed the course, you will be familiar with the functions of a converter and the respective interfaces. You will also be able to commission a converter quickly and reliably. Routine fault diagnosis and rectification help save time and optimize the availability of your plant.

Target Group: Users, Commissioning / Service / Maintenance Engineers

Course Contents:

- Basics of DC Drive:-
 - a) Basic DC Motor equations
 - b) Three phase controlled converter Thyristor accessories
 - d) PI Controller
 - e) Block diagram of DC Drive
 - f) Braking & Reversal/Single & Multiquadrant Drive
 - g) Optimization
 - h) Speed variation techniques
- Structure and functional principles of the SINAMICS DC MASTER converter: Control Unit CUD, Power Module, excitation circuit, interfaces
- Commissioning and parameterization activities using the BOP20 and AOP30 operator panels as well as the STARTER PC program

- BICO Technology, Binary Inputs & Outputs
- Procedures for commissioning and functional checks
- Optimizing current regulation and closed-loop speed control, automatic optimization
- Function block diagrams: Setpoint channel, inputs/outputs, free function blocks
- Concept of CDS and DDS
- Using Micro Memory Card: Structure and data backups
- Information on Drive Control Charts (DCC)
- Drive-end interface to PROFIBUS / PROFINET
- Expansions with Terminal Modules and Sensor Modules via DRIVE-CLiQ
- Parallel connections and peer-to-peer interfaces
- Thyristor Checking
- Operating states, alarms, and fault codes
- Service functions: Trace, measurement functions, diagnostic memories
- Practical exercises with AOP30 and STARTER on training equipment

Participant Prerequisite: Engineers in Electrical / Electronic Engineering with Power Electronics Background

Duration: 6 days, full time

Language: English



Application Based Crane Training

Code: AP-CRANE

Objectives: Making participants familiar with Crane System, Product used, Configuration, Commissioning & Maintenance of crane.

Benefits: You will understand crane specifications, system configuration, operational interlocks and control logic including brake control. You will be able to commission, trouble shoot, aware about common faults and able to take appropriate measures when fault occurs.

Target Group: Users, Commissioning / Service / Maintenance Engineers of Instrumentation / Electrical / Electronic Engineering.

Course Contents:

- Crane Basics
- Crane types & components overview
- Crane specifications, Standard system configurations
- Schematic drawing
- Switchgear part
- Product pallet for Crane applications & product features
- Operational interlocks & Stop categories for Hoist, Cross travel & Long travel

- Operation philosophy, Control logic, flowchart (On command & speed reference)
- Brake control
- Pre-commissioning guidelines
- Commissioning procedure
- Checking & setting important parameters
- Load test, trace recording
- Add-on features/technology for crane control
- Overview on Sway control, Positioning, Straight run controller, Wireless,
- CMS, YMS, RCOS
- Fault diagnosis through touch panel / CMS station
- Common faults/problems in crane application
- Troubleshooting & maintenance guidelines

Participant Prerequisite: Basic Knowledge of Electrical system.

Duration: 5 days, full time

Language: English

LV SWITCHGEAR & MOTOR

52	LV Switchgear Products & Coordination
53	LV Switchgear Products, Distribution & Panel
54	SIMOCODE AC-Motor control
55	Basic Automation for Switchgear User
56	AC Motor Basics Control & Maintenance
57	SIRIUS Soft Starter
58	Sentron PAC Meter



LV Switchgear Products & Coordination

Code: LV-SWPC

Objectives: The participants will learn the functional principal and operation of the air circuit breakers, MCCBs, Contactors, MPCBs and Relays.

The main emphasis of the course is on teaching practical product knowledge, in order to enable maintenance, inspect and service LV Switchgear products, to find simple errors, and to replace the spare parts.

Benefits: After this course participants shall able to troubleshoot the errors, inspect and service LV Switchgear products, change or replace the spares / accessories.

Target Group: Operation / Service / Maintenance / Commissioning staff.

Course Contents:

- Introduction and basic principles of low-voltage switchgear, switching principles.
- Basic Concepts of fault level, current carrying capacity.
- Principle of selectivity and cascading
- Function and operation of 3WL & 3WT circuit breakers.
- Installation and de-installation of the standard accessories.
- Introduction in protection settings of circuit breakers (characteristic curves)

- Overview of communication regarding 3WL air circuit breakers (Only theory)
- Maintenance instructions.
- Function and operation of 3VA & 3VT MCCB.
- Installation and de-installation of the standard accessories.
- Overview of communication regarding 3VA MCCB.
- Function and operation of HRC fuse and Switch Disconnecter Fuse.
- Function and operation of Contactors.
- SIRIUS Brand, features, Benefits.
- RLT Contactor, Vacuum Contactor product range, features.
- Compactness DOL, RDOL.
- Overload Relays, Motor Protection Circuit Breaker function and operation- why MPCB needs to be used.
- Type-2 Co-ordination and Co-ordination chart reading.
- Introduction to Timers and Relays.
- Introduction of Soft-starter, working principle and range.

Participant Prerequisite: Basic principles of electrical engineering and power distribution, knowledge of technical options and specifications of LV Switchgear products.

Duration: 4 days, full time

Language: English



LV Switchgear Products, Distribution & Panel

Code: LV-SWPD

Objectives: The participants will learn the functional principal and operation of the Low Voltage power distribution and control products like ACB, MCCB, SDF, contactors, relays and SIMARIS Software.

The main emphasis of the course is on teaching practical product knowledge, in order to enable maintenance, inspect and service LV Switchgear products, to find simple errors, and to replace the spare parts.

Benefits: After this course participants shall able to troubleshoot the errors, inspect and service LV Switchgear products, change or replace the spares/accessories. Also they will learn the SIMARIS software which can be helpful in the Designing part.

Target Group: Operation/ Service / Maintenance/ Commissioning staff.

Course Contents:

- Power Distribution Basics
- Selectivity of grid system
- Introduction and basic principles of low-voltage switchgear, switching principles.
- Basic Concepts of fault level, current carrying capacity.
- Principle of selectivity and cascading
- Function and operation of 3WL & 3WT circuit breakers.
- Installation and de-installation of the standard accessories.
- Introduction in protection settings of circuit breakers (characteristic curves)

- Overview of communication regarding 3WL air circuit breakers (Only theory)
- Maintenance instructions.
- Function and operation of 3VA & 3VT MCCB.
- Installation and de-installation of the standard accessories.
- Overview of communication regarding 3VA MCCB.
- Function and operation of HRC fuse and Switch Disconnecter Fuse.
- Function and operation of Contactors.
- RLT Contactor, Vacuum Contactor product range, features.
- Compactness DOL, RDOL.
- Overload Relays, Motor Protection Circuit Breaker function and operation- why MPCB needs to be used.
- Type-2 Co-ordination and Co-ordination chart reading.
- Use of the software SIMARIS
- Form of Internal separation
- Supply system
- Practical exercises

Participant Prerequisite: Basic principles of electrical engineering and power distribution, knowledge of technical options and specifications of LV Switchgear products.

Duration: 4 days, full time

Language: English



SIMOCODE AC-Motor control

Code: LV-SM

Objectives: Making participants familiar with SIEMENS make SIRIUS Motor Management Systems (SIMOCODE)

The main emphasis of the course is on teaching practical product knowledge in order to configure, parameterise SIMOCODE as per requirement, to find out simple errors and to communicate with the PLC device.

Benefits: After this course participants shall able to configure the Simocode as per the plant requirement, use the logic modules, apply the different types of protections to the motor and troubleshoot the errors.

Target Group: Operation / Service / Maintenance/ Commissioning staff.

Course Contents:

- Traditional panel concept.
- Advantages and disadvantages of traditional panel.
- Need of SIMOCODE.
- Expectations from SIMOCODE.
- Concept of intelligent MCC.
- Overview including Pro C, PRO S and Pro V versions.

- Overview and use of SIMOCODE ES 2007/TIA Portal including:-
 - Configuration of a Reverse starter
 - Explanation of parameters
 - Basic unit operation
 - Operator panel configuration
 - Expansion modules connected to PRO V
 - Use of control station to choose suitable ON/OFF operations from various Control stations.
 - Use of logic modules including truth tables, signal conditioning, timers, counters, flashing, flickering.
 - Diagnostic functions in SIMOCODE ES 2007 software.
 - Maintenance, service data and online trends.
 - Use of graphic charts.
 - Use of memory module and addressing plug.
- Introduction of SIMOCODE into an automation system.
- Configuration of SIMOCODE ES via TIA Portal hardware configuration.
- PLC Communications with Cyclic data exchange.
- Hands On practice and application discussion.

Participant Prerequisite: Basic principles of electrical engineering, LV motor & Switchgear products. Basic knowledge about IMCC.

Duration: 3 days, full time

Language: English



Basic Automation for Switchgear User

Code: LV-BAS

Objectives: The participants learn communication options using various bus systems (PROFIBUS, MODBUS TCP/IP) with SENTRON Devices (3WL, 3VA, PAC meter) and SIMOCODE. The effective use of the commissioning and parameterization tool powerconfig is communicated in the practical unit.

Benefits: After this course participant shall be able to make a communication network with the various communicable switchgear devices which can help them to exchange the data from the switchgear devices to the PLC and SCADA system. Also they will be able to troubleshoot the communication related problems.

Target Group:

Course Contents:

- Introduction to Digital / Analog Signals
- Basic Concepts of Bits, Bytes, Word, Binary, Decimal, BCD, Hex
- Input types (Sinking/Sourcing), Output types (Trans / Relay), Isolation -Galvanic/Optical etc.
- RS232, RS485 difference
- Introduction to various bus systems - PPI, MPI, Profibus, TCP/IP
- Basic Constituents of PLC
- How PLC works?
- Overview of SIMATIC S7 PLC
- Range, Functionality
- Hardware details like front indication, terminals, ports on module
- Introduction to selection
- Hardware configuration in TIA Portal
- PC-PLC communication
- Installation guidelines, powering & wiring of modules, addressing
- Hand-on practice
- Programming language and representation in LAD
- Elementary Data types in PLC
- Using Symbol Table and VAT
- Basics of Communication (Topology, Synchronous/ Asynchronous, Half duplex etc.)
- ISO / OSI 7 layers - brief overview
- Master-Slave, Multi master, TCP/IP
- Profibus Details
- No. of slaves per master
- Criteria for using repeater / MLFB
- Brief overview of data structure
- Function and use of GSD files
- Difference between ES and SCADA
- Diagnostics functions
- Reading and understanding communication manual of SIMOCODE, WL/VA, Soft Starter, PAC meter
- Basic types, Data Sets, Data Records
- Setting up the Profibus network on SIMATIC Manager, adding DP devices like SIMOCODE, WL, Soft starter, PAC meter
- Communicating / controlling switchgear from PLC

Participant Prerequisite: Engineers from electrical / electronics engineering. Participants should be familiar with the 3WL ACB, Soft-starter, PAC meter and Simocode.

Duration: 3 days, full time

Language: English



AC Motor Basics Control & Maintenance

Code: LV-IM

Objectives: The participants learn Three Phase Induction Motor, control, installation and Maintenance guidelines.

Benefits: After this course participants learn the concept/ basic terms about the Induction motor which can be helpful for them to read, identify and select proper motor as per the application. They will be able to do the maintenance with the proper/recommended accessories which can help to increase overall life of the equipment. Also they will be able to identify the problem, faults and thus reduce downtime.

Target Group: Operation / Maintenance / Sales

Course Contents:

- Basics of Electricity.
- Construction: Description of various parts & their significance in motor operation.
- Operation, working principle & basic equations.
- Speed Torque Characteristics, Effects of supply variations over the motor performance.
- Efficiency of induction motor-Variations losses in the induction motor.
- Insulation class & their temperature ranges.

- Inverter duty motor.
- Comparison of normal & inverter duty motor.
- Energy efficient motor.
- Various reasons of high starting current of an induction motor & their effects on supply system.
- Starters- DOL & star delta.
- Hands on practice on motor and starter.
- Soft starter – brief overview.
- VFD – brief overview
- Advance control of induction motor - SIMOCODE overview.
- Installation & commissioning guidelines.
- Maintenance guidelines.
- General faults in the induction motor & their countermeasures

Participant Prerequisite: Electrical / Electronics/ Mechanical Engineers. Participants should be familiar with the basics of Motor.

Duration: 3 days, full time

Language: English



SIRIUS Soft Starter

Code: LV-SS

Objectives: The participants will learn the function, principal and operation of the Soft starter

The main emphasis of the course is on teaching practical product knowledge for installation, commissioning and to find out simple errors.

Benefits: After this course participant shall be able to configure the Soft-starter (Soft-start and Soft-stop) for different types of applications and loads. Also they can apply different protections to the motor and troubleshoot the faults.

Target Group: Operation / Maintenance / Commissioning / Sales staff.

Course Contents:

- Characteristics, speed and torque equation of 3 phase SQIM (Motor).
- Different terminologies of the characteristics, DOL starting, S-D starting advantages, disadvantages & Need of soft starter.
- Expectations from electronic soft starter, Block diagram of electronic soft starter.
- Phase angle control using thyristors & Speed Torque characteristics after usage of soft starter.

- **3RW30, 3RW40 and 3RW44** Soft Starter
- Direct connection and inside delta connection.
- Power and control Connections
- Different settings required at the time of installation
- Information about different starting classes.
- Motor Protections
- Soft Starter ES Smart Software & Diagnostics and messages
- Installation Guidelines, Wiring, Components selection for Soft starter feeders.
- Overview of new generation Soft-starter **3RW50 and 3RW52**
- Hands On practice
 - Start-up Procedure
 - Parameterization using key pad
 - Parameterization using Soft starter ES Smart Software
 - Fault Finding Practice
 - Communication with Siemens PLC S-7

Participant Prerequisite: Electrical/Electronics Engineers. Participants should be familiar with the Induction Motor and PLC.

Duration: 2 days, full time

Language: English



Sentron PAC Meter

Code: LV-PAC

Objectives: The participants learn **SENTRON PAC meter** configuration and parameterization along with communication options using PROFIBUS, PROFINET and MODBUS TCP/IP. The effective use of the commissioning and parameterization tool powerconfig is communicated in the practical unit.

Benefits: After this course participant shall able to configure PAC meter, communicate with the Powerconfig. Software for remote parameterization and communication with the Automation System.

Target Group: Operation / Service / Maintenance / Commissioning / Planning / Sales

Course Contents:

- Need of energy management
- Basic concept of energy management – Active, reactive & apparent components, harmonics, power quality, Form factor, crest factor, introduction to industrial tariff, demand measurement, pollution degree, over voltage category, zero blind measurement.

- PAC Meter 3100 - Range, features, benefits, installation guidelines, basic parameterization & communication via gateway.
- PAC Meter 3200 - Range, features, benefits, installation guidelines, basic parameterization & communication via Ethernet.
- PAC Meter 4200 - Range, features, benefits, installation guidelines, basic parameterization & communication Ethernet, profibus.
- PAC meter parameterization through Powerconfig software.
- Logic block function, power consumption (KWh and MD) and Sliding Window Demand in PAC4200
- Introduction to report management- Daily reports, cost center reports, allocation reports.
- Integration of PAC meter with S7 PLC.

Participant Prerequisite: Engineers from electrical / electronics and engineering. Participants should be familiar with the PLC.

Duration: 2 days, full time

Language: English

Feedback from our customers

6RA70 training at IATC, Panchkula (ATC, North)

"I particularly liked the infrastructure here, the sincerity of trainer. All are very punctual. The trainer has the sufficient industry experience."

- From Mr. Gaurav Singh, Hindalco Industries, Renukoot

SIMATIC WinCC Training at Karunya University (ATC South)

"Karunya University campus is Excellent. Efforts taken by faculties to make the WinCC course interesting is appreciable."

- From Mr. Ajay Jadhav, BOSCH Ltd., Goa

TIA Basic with SIMATIC S7 300 & STEP 7 at Esskay Services (ATC West)

"SITRAIN Trainers have excellent skills to explain technicalities step by step. Good understanding about Step 7-300. Personnel like engineers working with Siemens products, get good exposure on professional front."

- From Rahul Ganeshwadi, Essar Oilfield Services, Dubai

Training at SITRAIN, Kalwa

"In the days of mass quality production through automation, Siemens PLC is playing a vital role. Siemens Training Center is further adding to the value by providing in depth training and applications knowledge to the engineers."

- From Mr. S. Raghuveer, ITC Ltd., Andhra Pradesh

TIA Basic with SIMATIC S7 300 & STEP 7 at Esskay Services (ATC East)

"I particularly liked the training methodology adopted by the trainer and cordial atmosphere in the training centre."

- From Mr. Subramanian, TATA STEEL, Jamshedpur

General Notes & Commercial Terms

(Common to all the Training Centres operating under SITRAIN-INDIA)

Note: Training Centre (SITRAIN-Siemens Kalwa) and 8 STE's (SITRAIN Training Executors) are all centrally coordinated, monitored & controlled by Siemens-SITRAIN, Kalwa. MCMT (Machine Tool Drives) Training at Bangalore/Pune is controlled from Bangalore

- (a) Advanced courses will be conducted at Siemens Ltd., Kalwa Works, Thane-Belapur Road, Thane - 400 601, Maharashtra
- (b) Basic courses will be conducted in our SITRAIN Training Executors (STE's).
- Registration-Booking of seats for all clients at all Training Centres & Courses will continue to be made centrally at SITRAIN-KALWA by online & Email / Phone: +91 (022) 39663208 www.siemens.co.in/sitrain
E-mail: customer.training.in@siemens.com, You may also contact nearest Siemens Regional Office, Customer Care, Regional Service Centres
- Course fee is to be paid in advance (only on confirmation of seat), in the form of Credit Card (Visa/Master) / DD / Cheque drawn in favor of SIEMENS LTD & payable at Mumbai or location of our Customer Care Office along with complete taxes and duties
- The course fee includes the course material, breakfast, lunch and tea. The training is non residential
- Since there are limited seats in each programme, the seats are confirmed on 1st come 1st served basis. The course timings are from 8.30 AM to 5.00 PM
- (A) Every attempt will be made to conduct the courses as announced. However we reserve the right to postpone or cancel the courses due to inadequate booking or circumstances beyond our control. We shall do our best to send timely communication in such situations, if possible
- (B) Every attempt will also be made to accommodate the participants at nearest (geographically) Siemens Training Centre in your area. This is valid for all parts of India including North/South/West/East
- Kindly contact us for the course contents and information on prerequisite qualification / knowledge to attend the courses
- Please note that the course fee is exclusive of service tax at present applicable rate of 18%. However any change in the tax rate structure will be accordingly applied
- Please note that Rupee rates are applicable ONLY for Indian Nationals sponsored by INDIAN COMPANIES. For Foreign Nationals or Indian Nationals sponsored by FOREIGN COMPANIES rates will be quoted in EURO. Kindly contact us for more details on the same
- All the transactions (mainly commercial) like Training Order, Payment should be done necessarily through your nearest Siemens Regional Office only. You may contact us here at Kalwa Training Center for additional details.
- Training fees once paid are non-refundable
- For complaints / queries / suggestions log in to www.siemens.co.in/sitrain

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SITRAIN Locations in INDIA



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For Life Cycle Support of Products, Systems and
Solutions call us on 1800 209 0987

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