SITRAIN Australia Catalogue

Industrial learning the way you like it – with SITRAIN

SIEMENS

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SECTION 1: ONLINE TRAINING OFFER – HANDS ON REMOTE AND ON DEMAND

SITRAIN ACCESS

SITRAIN Access is learning in the digital age. It offers individualized ways to build knowledge and access to exclusive digital training courses.

Take advantage of sustainable learning success with a wide range of methods. Improve your skills – whether in groups or by yourself. Whenever, wherever and however you need to.

The digital learning services provided by **SITRAIN Access** cover a range of topics relating to the Siemens product portfolio and help ensure greater transparency: Learners know how far they have progressed, what knowledge they still need, and the best way to obtain it.

Companies get an overview of the level of knowledge their employees have reached and can propose or assign further suitable courses.

All learning content is structured on a modular basis and can be utilized as you see fit after you subscribe: Several hours at a time, or just a few minutes on the way to work – the choice is yours

Booking details:	
Course Code	ACCESS-P
Duration	1 YEAR INDIVIDUAL SUBSCRIPTION
Delivery	ONLINE - Training from your home/office
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

BASIC PLC COURSE

COURSE CONTENT:

- Principles of the functionality of the PLC (Programmable Logic Controller).
- Binary and Hexadecimal numbers, difference between Discreet and Analogue I/O.
- Basic Logic Operations.
- Basic programming using Ladder Logic Diagram using Siemens TIA Portal Software.
- Test software using PLC simulator and HMI Simulator.

DESIGNED FOR:

Adult education, novice programmers. Preparation for TIA Pro 1 Course.

BENEFITS:

- Remote training from your location - No need for travel (reducing idle time and expenses)
- Training from your home/office
- The attendee will learn all about remote connectivity to a Siemens controlled Industrial system. Interaction between simulated and real equipment.

COURSE DESCRIPTION:

- Live online tutorial using Microsoft Teams.
- Understanding the concept of Totally Integrated Automation.
- Understanding the structure of a Siemens PLC the role of Functions (FC's), Function Blocks (FB's) Data Blocks (DB's) and Organization Blocks (OBs)

PRE-REQUISITE

Basic knowledge of electrical circuits connection and the ability to use a Microsoft Windows PC.

EQUIPMENT REQUIREMENT

Personal Computer with high-speed internet (unlimited download data account is preferred).

An additional monitor is recommended (additional monitor 24inch for optimum experience)

Booking details:

Course Code	RT-PLC1
Duration	1 day
Delivery	ONLINE - Training from your home/office
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

HANDS ON REMOTE TRAINING S7 PLC CLASSIC S7 300/400 PROGRAMMING AND MAINTENANCE

COURSE CONTENT:

- The course focused on the concept of both programming and fault finding for hardware and software with a practical hands-on approach.
- Topics covered include Totally Integrated Automation (TIA), incorporating the PLC, HMI and Networking.
- All topics are backed up with practical exercises using a conveyor model and simulator with ET200s, TP170B HMI and G120 VSD.

DESIGNED FOR:

Engineers, technicians, consultants, electricians.

BENEFITS:

Remote training from your location - No need for travel (reducing expenses). Training from your home/office

In addition of the standard training course, the attendee will learn about remote connectivity to a Siemens controlled Industrial system. Interaction between simulated and real equipment, test and troubleshooting using Proneta software plus our Web server (PLC) and Sm@rt Server (HMI) options.

COURSE DESCRIPTION:

- Live online tutorial plus simultaneously remote access to control a S7-300 PLC based training System.
- Using Simatic Classic software, recognise and evaluate software and hardware faults.
- Understanding the role of Functions (FC's), Function Blocks (FB's), Data Blocks (DB's) and Organisation Blocks (OB's)
- Analogue value processing
- Integrate devices on a Profibus DP network.
- Use Simatic WinCC Flex to configure HMI devices.

PRE-REQUISITE

Basic knowledge of control and PLC concepts with the ability to use a Microsoft Windows PC. Use of Binary and Hexadecimal numbers

EQUIPMENT REQUIREMENT

Personal Computer with high-speed internet. One or two additional monitor(s) (recommended 2 additional monitors

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Booking details:

Course Code	RT-7PROG1
Duration	3.5 days
Delivery	ONLINE - Training from your home/office
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

HANDS ON REMOTE TRAINING SIMATIC TIA PORTAL PROGRAMMING. TIA PRO1

COURSE CONTENT:

- Overview and significant performance characteristics of the SIMATIC S7 system family (S7-1200 & S7-1500)

- The components of the TIA Portal: STEP 7, WinCC, communication

- Program execution in automation systems

- Binary and digital operations in Ladder Logic Diagram (LAD)

- Programming of reusable blocks in FC's and FB's. Use of Data Blocks and Programming Organisational Blocks

- Test tools for system information, troubleshooting, and diagnostics

- Hardware Configuration and parameterization of the S7 1500 PLC, a PROFINET IO System with ET200SP a Comfort Touch Panel and a G120 VSD

DESIGNED FOR:

Engineers, technicians, consultants, electricians.

PRE-REQUISITE

Basic knowledge of control and PLC concepts with the ability to use a Microsoft Windows PC. Use of Binary and Hexadecimal numbers.

BENEFITS:

- Remote training from your location - No need for travel (reducing idle time and expenses)
- Training from your home/office
- In addition of the standard training course the attendee will learn all about remote connectivity to a Siemens controlled Industrial system. Interaction between simulated and real equipment, use of Proneta software plus our Web server (PLC) and Sm@rt Server (HMI) options.

COURSE DESCRIPTION:

- Live online tutorial plus simultaneously remote access to control a S7-1500 PLC based training System.

- In this first part of the SIMATIC TIA Portal programming training, we teach you the handling of the TIA Portal, basic knowledge standard PLC programming. You also receive an overview of HMI, PROFINET IO, and connecting drives.

EQUIPMENT REQUIREMENT

Personal Computer with high-speed internet. Recommended 2 additional monitors 24inch for optimum experience

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Booking details:

Course Code	RT-TIA1
Duration	3.5 days
Delivery	ONLINE - Training from your home/office
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

HANDS-ON REMOTE TRAINING SIMATIC TIA PORTAL ADVANCED APPLICATIONS. TIA PRO2

COURSE CONTENT:

Students will learn to leverage the power of TIA Portal software with advanced structured data applications.

Analogue value processing

Functions, function blocks, and multi-instances using the IEC-compliant timer/counter as an example (International Electrotechnical Commission)

Jump commands.

Indirect addressing

Classical software error handling and evaluation with error organisation blocks (OBs)

Evaluation of diagnostic data

Troubleshooting and alarms with an HMI device

Introduction into Axis Control by means of a Technology Object.

Deeper understanding of contents through practical exercises on TIA system model

DESIGNED FOR:

Advanced TIA Portal users.

COURSE DESCRIPTION:

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

• Understand the interaction of the TIA components

Apply classical program development methods.

Solve comprehensive programming task.

Understand the fundamental differences between optimised access and non-optimised block access.

Program software error handling and evaluation

Configure alarms of the operator control and monitoring system (HMI)

Configure TIA system components consisting of SIMATIC S7, HMI, remote IO, and a Sinamics G120

PRE-REQUISITE

▪ Must have complete Simatic TIA Portal Programming (TIA-PRO1)

IMPORTANT

- **Appendixes SCL, STL and Graph programming languages are not covered by this training course.**

Booking details:

Course Code	RT-TIA2
Duration	3.5 days
Delivery	ONLINE - Training from your home/office
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

HANDS ON REMOTE VSD TRAINING IN TIA PORTAL

COURSE CONTENT:

In this course you will combine a SIMATIC S7-1500 controllers with a G120 drive in the TIA Portal. You will be able to integrate and commission a G120 Drive with TIA Portal on ProfiNet - ProfiDrive. Use of SinaSpeed block.

- In this technology course, you will learn step by step the benefits and the use of these functions. After each learning step, you will deepen your knowledge with hands-on programming.'

DESIGNED FOR:

PROGRAMMERS, COMMISSIONING ENGINEERS, ENGINEERING PERSONNEL, MAINTENANCE PERSONNEL, SERVICE PERSONNEL

COURSE DESCRIPTION:

The Course will step you through connecting a G120 to the Siemens S7-1500 PLC

- You will look at connection methods of a drive and PLC, (Profinet)
- PLC – Drive communication (Telegrams)
- Simple commissioning of the drive
- Control of the drive in the PLC programming
- Advanced control of the drive and additional feedback to the PLC
- How to show additional diagnostics from the drive on the HMI

PRE-REQUISITE

Knowledge of programming in the SIMATIC TIA Portal (equivalent to knowledge after completion of the TIA-PRO1 course)

If you have not completed the course, please contact us to discuss your skill base before registering for the course.

Booking details:

Course Code	RT-TIA-MCC
Duration	1 day
Delivery	ONLINE - Training from your home/office
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

REMOTE WINCC V7.X SCADA BASIC CONFIG.

COURSE OBJECTIVES:

- The SCADA system (Supervisory Control and Data Acquisition) WinCC V7.x is designed for visualization and operator control of processes, production flows, machines, and plants.

- In this course, you will learn how to use SIMATIC WinCC easily and quickly for your applications. You will also be shown how to log messages and values and how to design and implement the appropriate logs. You can effectively use the engineering phase thanks to what you have learned about reliably operating the system.

- After attending the course, you can do the following:

  • Efficiently and reliably operate SIMATIC WinCC

  • Understand and edit SIMATIC WinCC projects

  • Optimally design an operator interface and selectively use faceplates

  • Create screen navigation and user administration

  • Implement logging concepts for messages, alarms and measured values

  • Selectively access values from SIMATIC S7 and display and further process these values in WinCC

  • Create user-defined scripts

  •Understand the advantages of the openness of WinCC

DESIGNED FOR: Programmers, Engineers, technicians, consultants, electricians.

PRE-REQUISITE: Basic knowledge of control and PLC concepts, PC and Windows experience is essential

COURSE DESCRIPTION:

- System overview of SIMATIC WinCC: for example, overview of the various WinCC licenses, possible system configurations
- WinCC projects: Creating projects, types of projects, data structure.
- Communication with controllers: Overview of possible controllers, configuration of a connection to the SIMATIC S7, configuration limits for communication, diagnostic options
- Creating tags and groups, working effectively with the Configuration Studio, internal and external tags, system info channel, simulation of tag values
- Cross Reference Editor
- Working effectively with the Graphics Designer
- Dynamization of objects in screens using tag connection, configuration dialog, dynamic wizard, animation, dynamic dialog, direct connection, C scripts and VB scripts
- Diagnostic and performance guidelines for C scripts and VB scripts
- Global Script Editor for user-created functions and screen-independent actions
- User administration: WinCC users and groups, authorization levels
- Faceplate technology via screen window with tag prefix and via faceplate types
- tag logging: Archives and archive tags, archive configuration, types of archiving.
- Alarm logging: Alarm procedures, alarm classes and types, archive configuration, alarm control, system alarms, status tags
- Data archiving with the User Archives option
- Communication with S7-1500
- Report Designer for reporting

Booking details:	
Course Code	RT-BWINCCS
Duration	4.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

REMOTE WINCC V7.X SCADA ADVANCED

COURSE CONTENT:

The SCADA system (Supervisory Control and Data Acquisition) WinCC is designed for visualization and operator control of processes, production flows, machines and plants.

In the advanced course, you will learn how to use SIMATIC WinCC easily and quickly for your applications. You will also be shown how to log messages and values and how to design and implement the appropriate logs. You can effectively use the engineering phase thanks to what you have learned about reliably operating the system.

After attending the course, you can do the following:

Troubleshoot errors in C and VB scripts more effectively.

Use WinCC as multi-user system (client/server architectures)

Configure WinCC with redundant servers.

Configure WinCC for use with web clients.

Create reports with the information server.

Provide contents from WinCC databases (WinCC message and trend archives) with database options for your own applications.

Configure more efficiently.

Get started with automated configuring.

DESIGNED FOR:

Programmers, Engineers, Technicians, Consultants, Electricians

COURSE DESCRIPTION:

In-depth training on Visual Basic Script (VBS actions and VBS object structures)

In-depth training on C scripts in WinCC

Introduction of WinCC database (dimensioning of Runtime databases)

Introduction to networks (TCP/IP, subnetting and name resolution)

WinCC server (WinCC client with and without project)

WinCC redundancy option

Time synchronization (client/server, redundancy)

WinCC Web Navigator Web option

WinCC Web UX Web option

Introduction to Process Historian

WinCC Information Server Web option

Cross-system communication: OPC, WinCC options Connectivity Pack/Station, IndustrialDataBridge

Efficient configuration: CrossReference, ApDiag.exe diagnostic tool

VBA for automated configuration in Graphics Designer

Overview of WinCC options: ODK with IndustrialX, User Archive, Simatic Logon, Change Control and Audit, Energy Manager, Calendar Scheduler, Event Notifier, Performance Monitor

Deeper understanding of contents through practical exercises

PRE-REQUISITE

The prerequisite is attendance of the course SIMATIC WinCC, System Course (ST-BWINCCS) or equivalent knowledge.

Booking details:

Course Code	RT--BWINOND
Duration	4.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

REMOTE PCS 7 SYSTEM

COURSE CONTENT:

- System overview and architecture: subsystems for automation, operation, communication, and engineering.
- Configuration concept: from the field level up to the HMI level.
- Network and hardware configuration.
- Process Object View as a plant-based structure of the project.
- Standardising by library and block concept, process tag types, models.
- Automation solutions by graphical configuration with CFC and SFC.
- Monitoring and controlling.
- Distributed engineering (Multi Project).
- HMI configuration: graphics, trending, alarming, reports.
- Configuration of client/server and server redundancy.

COURSE DESCRIPTION:

As a user of the Process Control System SIMATIC PCS 7, you will learn how to apply the engineering features in a structured and efficient way. Supported by examples and exercises, demonstrating that the process automation of a plant is realised from the field level up to the HMI level. The key aspects of SIMATIC PCS 7 are covered, e.g., its system-wide consistency, plant-oriented configuring, data and project management and the co-operation between the various components and tools.

PRE-REQUISITE

Basic understanding of process control systems.

DESIGNED FOR:

Engineering level course predominantly for personnel involved in the design and implementation of PCS7 process control system: control engineers, technicians, consultants. Also recommended for the operations and maintenance personnel requiring more in-depth knowledge of the system. e.g., for system modification tasks.

Booking details:

Course Code	RT-PCS7SYS
Duration	9.5 days
Delivery	ONLINE - Training from your home/office
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SECTION 2: SCHEDULED AND ON-SITE FACE TO FACE TRAINING – PLC, HMI AND VSD BASED TECHNOLOGY

S7 PLC CLASSIC - S7 300/400 PROGRAMMING AND MAINTENANCE

COURSE CONTENT:

- The course focused on the concept of both programming and fault finding for hardware and software with a practical hands-on approach.
- Topics covered include Totally Integrated Automation (TIA), incorporating the PLC, HMI and Networking.
- All topics are backed up with practical exercises using a conveyor model and simulator with ET200s, TP170B HMI and G120 VSD.

DESIGNED FOR:

Engineers, technicians, consultants, electricians.

COURSE DESCRIPTION:

- Using Simatic Classic software, recognise and evaluate software and hardware faults in a S7 TIA system.
- Understanding the role of Functions (FC's) and Function Blocks (FB's)
- Storing process data in Data Blocks (DB's)
- Configuring and application of Organisation Blocks (OB's)
- Analogue value processing
- Integrate devices on a Profibus DP network.
- Use Simatic WinCC Flex to configure HMI devices.

PRE-REQUISITE

Basic knowledge of control and PLC concepts with the ability to use a Microsoft Windows PC. Use of Binary and Hexadecimal numbers.

Booking details:

Course Code	ST-7PROG1
Duration	3.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

TIA PORTAL PROGRAMMING 1

COURSE CONTENT:

- Overview and significant performance characteristics of the SIMATIC S7 system family (S7-1200 & S7-1500)

- The components of the TIA Portal: STEP 7, WinCC, communication

- Program execution in automation systems

- STEP 7 block types and program structuring

- Binary and digital operations in the Ladder Logic diagram (LAD)

- Programming of reusable blocks in FC's and FB's; Data management with data blocks. Programming organisational blocks

- Test tools for system information, troubleshooting, and diagnostics

- Hardware Configuration and parameterization of the S7 1500 PLC, a PROFINET IO System with ET200SP a Comfort Touch Panel and a G120 VSD

DESIGNED FOR:

Engineers, technicians, consultants, electricians.

PRE-REQUISITE

Basic knowledge of control and PLC concepts with the ability to use a Microsoft Windows PC. Use of Binary and Hexadecimal numbers.

COURSE DESCRIPTION:

- The Totally Integrated Automation Portal (TIA Portal) forms the work environment for integrated engineering with SIMATIC STEP 7 and SIMATIC WinCC

- In this first part of the SIMATIC TIA Portal programming training, we teach you the handling of the TIA Portal, basic knowledge standard PLC programming. You also receive an overview of HMI, PROFINET IO, and connecting drives.

- You can deepen your theoretical knowledge with numerous practical exercises on a TIA system model. This consists of a SIMATIC S7 automation system, ET200 distributed I/O, Touch panel, drive and a belt model.

- After attending the course, you can do the following:

  - Understand the fundamentals of interaction of the TIA components.

  - Solve simple programming tasks using elementary STEP 7 instructions.

  - Reliably operate the "TIA Portal" engineering platform

  - Program simple plant functions with basic STEP 7 instructions in the ladder diagram (LAD) or function block diagram (FBD)

Booking details:

Course Code	TIA-PRO1
Duration	3.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

TIA PORTAL PRO 2 – ADVANCED APPLICATIONS

COURSE CONTENT:

Students will learn to leverage the power of TIA Portal software with advanced structured data applications.

Analogue value processing

Functions, function blocks, and multi-instances using the IEC-compliant timer/counter as an example (International Electrotechnical Commission)

Jump commands.

Indirect addressing

Classical software error handling and evaluation with error organisation blocks (OBs)

Evaluation of diagnostic data

Troubleshooting and alarms with an HMI device

Introduction into Axis Control by means of a Technology Object.

Deeper understanding of contents through practical exercises on TIA system model

DESIGNED FOR:

Advanced TIA Portal users.

COURSE DESCRIPTION:

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

• Understand the interaction of the TIA components

Apply classical program development methods

Solve comprehensive programming task

Understand the fundamental differences between optimised access and non-optimised block access.

Program software error handling and evaluation

Configure alarms of the operator control and monitoring system (HMI)

Configure TIA system components consisting of SIMATIC S7, HMI, remote IO, and a Sinamics G120

PRE-REQUISITE

▪ Must have complete Simatic TIA Portal Programming (TIA-PRO1)

IMPORTANT

Appendixes SCL, STL and Graph programming languages are not covered in this training.

Booking details:

Course Code	TIA-PRO2
Duration	3.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SIMATIC SYSTEM UPDATE TIA PORTAL

COURSE CONTENT:

In this course you will learn about the major differences between SIMATIC S7-300/400 and SIMATIC S7-1500, the engineering tools SIMATIC Manager and TIA Portal, as well as STEP 7 V5.x and STEP 7 based on TIA Portal.

You will learn the possibilities of the configuration and the advanced programming of a SIMATIC S7-1500 automation system with the "TIA Portal" engineering platform.

After attending the course, you can:

- Efficiently use the "TIA Portal" engineering platform
- Configure and program components of the SIMATIC S7-1500 automation system with the TIA Portal
- Perform a commissioning of TIA components.

DESIGNED FOR:

PROGRAMMERS, COMMISSIONING ENGINEERS, ENGINEERING PERSONNEL, MAINTENANCE PERSONNEL, SERVICE PERSONNEL

Pre-requisite

Completed the SIMATIC ST-7PROG1 (Classic) course and practical experience.

If you have not completed the course, please contact us for an entry test to ensure that you have enough knowledge before attending the course.

COURSE DESCRIPTION:

- Engineering tools TIA Portal components: SIMATIC STEP 7 and SIMATIC WinCC
- Introduction of the SIMATIC S7-1500 hardware
- Configuration of devices and networks of the SIMATIC S7 system family using SIMATIC S7-1500 as an example
- Working with the PLC Tag Table in TIA Portal
- Program blocks and editor
- Advanced programming possibilities of a SIMATIC S7-1500
- Troubleshooting with TIA Portal tools and the SIMATIC S7-1500 CPU display
- Presentation of the Structured Control Language (SCL) editor
- Presentation of the SIMATIC WinCC operator control and monitoring system
- Migration of a SIMATIC STEP 7 V 5.x project to SIMATIC STEP 7 based on TIA Portal
- Adaption of a SIMATIC S7-300/400 program to the SIMATIC S7-1500
- Presentation of the 'StartDrive' engineering tool with interfacing to a SINAMICS G120 drive
- Deeper understanding of contents through practical exercises on the SIMATIC S7-1500 system model

Booking details:

Course Code	TIA-SYSUP
Duration	3.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

WINCC V7.X SCADA BASIC CONFIGURATION

COURSE OBJECTIVES:

- The SCADA system (Supervisory Control and Data Acquisition) WinCC V7.x is designed for visualization and operator control of processes, production flows, machines, and plants.

- In this course, you will learn how to use SIMATIC WinCC easily and quickly for your applications. You will also be shown how to log messages and values and how to design and implement the appropriate logs. You can effectively use the engineering phase thanks to what you have learned about reliably operating the system.

- After attending the course, you can do the following:

  • Efficiently and reliably operate SIMATIC WinCC

  • Understand and edit SIMATIC WinCC projects

  • Optimally design an operator interface and selectively use faceplates

  • Create screen navigation and user administration

  • Implement logging concepts for messages, alarms and measured values

  • Selectively access values from SIMATIC S7 and display and further process these values in WinCC

  • Create user-defined scripts

  • Understand the advantages of the openness of WinCC

DESIGNED FOR: Programmers, Engineers, technicians, consultants, electricians.

PRE-REQUISITE: Basic knowledge of control and PLC concepts, PC and Windows experience is essential

COURSE DESCRIPTION:

- System overview of SIMATIC WinCC: for example, overview of the various WinCC licenses, possible system configurations
- WinCC projects: Creating projects, types of projects, data structure.
- Communication with controllers: Overview of possible controllers, configuration of a connection to the SIMATIC S7, configuration limits for communication, diagnostic options
- Creating tags and groups, working effectively with the Configuration Studio, internal and external tags, system info channel, simulation of tag values
- Cross Reference Editor
- Working effectively with the Graphics Designer
- Dynamization of objects in screens using tag connection, configuration dialog, dynamic wizard, animation, dynamic dialog, direct connection, C scripts and VB scripts
- Diagnostic and performance guidelines for C scripts and VB scripts
- Global Script Editor for user-created functions and screen-independent actions
- User administration: WinCC users and groups, authorization levels
- Faceplate technology via screen window with tag prefix and via faceplate types
- tag logging: Archives and archive tags, archive configuration, types of archiving.
- Alarm logging: Alarm procedures, alarm classes and types, archive configuration, alarm control, system alarms, status tags
- Data archiving with the User Archives option
- Communication with S7-1500
- Report Designer for reporting

Booking details:

Course Code	ST-BWINCCS
Duration	4.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

WINCC V7.X SCADA ADVANCED

COURSE CONTENT:

The SCADA system (Supervisory Control and Data Acquisition) WinCC is designed for visualization and operator control of processes, production flows, machines and plants.

In the advanced course, you will learn how to use SIMATIC WinCC easily and quickly for your applications. You will also be shown how to log messages and values and how to design and implement the appropriate logs. You can effectively use the engineering phase thanks to what you have learned about reliably operating the system.

After attending the course, you can do the following:

Troubleshoot errors in C and VB scripts more effectively.

Use WinCC as multi-user system (client/server architectures)

Configure WinCC with redundant servers.

Configure WinCC for use with web clients.

Create reports with the information server.

Provide contents from WinCC databases (WinCC message and trend archives) with database options for your own applications.

Configure more efficiently.

Get started with automated configuring.

DESIGNED FOR:

Programmers, Engineers, Technicians, Consultants, Electricians

COURSE DESCRIPTION:

In-depth training on Visual Basic Script (VBS actions and VBS object structures)

In-depth training on C scripts in WinCC

Introduction of WinCC database (dimensioning of Runtime databases)

Introduction to networks (TCP/IP, subnetting and name resolution)

WinCC server (WinCC client with and without project)

WinCC redundancy option

Time synchronization (client/server, redundancy)

WinCC Web Navigator Web option

WinCC Web UX Web option

Introduction to Process Historian

WinCC Information Server Web option

Cross-system communication: OPC, WinCC options Connectivity Pack/Station, Industrial Data Bridge

Efficient configuration: Cross Reference, ApDiag.exe diagnostic tool

VBA for automated configuration in Graphics Designer

Overview of WinCC options: ODK with Industrial X, User Archive, Simatic Logon, Change Control and Audit, Energy Manager, Calendar Scheduler, Event Notifier, Performance Monitor

PRE-REQUISITE

The prerequisite is attendance of the course SIMATIC WinCC, System Course (ST-BWINCCS) or equivalent knowledge.

Booking details:

Course Code	**ST--BWINOND**
Duration	4.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SIMATIC WINCC UNIFIED 1, SYSTEM COURSE

BRIEF DESCRIPTION:

- SIMATIC WinCC Unified is a completely new visualization system that enables you to successfully master the challenges of digitization in machine and plant engineering. The latest web and edge technologies combined with open interfaces enable you to implement your ideas flexibly and according to application-specific requirements.

- **Designed for:**

Engineers, technicians, programmers, consultants and electricians tasked with creating and/or editing HMI projects using TIA Portal.

PRE-REQUISITE

- TIA Portal 1 (Remote or face to face)

- PC and Windows experience is essential.

COURSE CONTENT:

- System overview.
- Installation of WinCC Unified
- User Interface.
- Configuring HMI Device.
- Configuring Communication.
- Downloading Configuration to the HMI Device.
- Creating Screens, part 1: Editor, objects & concepts.
- Creating Screens, part 2: Displaying & changing process values.
- Creating Screens, part 3: System functions, navigation & dynamization.
- Faceplates.
- User Management.
- Security.
- Data Logging.
- Scheduled Tasks.
- Alarms.

Booking details:

Course Code	TIA-UWCC1
Duration	3 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

STEP 7 DISTRIBUTED SAFETY CONFIGURATION AND PROGRAMMING

COURSE CONTENT:

This course is aimed at everyone who wants to learn the handling, fault diagnosis, engineering and commissioning of the SIMATIC S7-300F fail safe automation system as well as the philosophy of failsafe controllers, the diagnosis and fault handling /correction.

Please note: this course doesn't give the attendee safety certification; it is based on how to use the safety part of the Step 7 Classic software.

DESIGNED FOR:

Engineers, technicians, consultants, electricians.

COURSE DESCRIPTION:

- Overview of the standards and guidelines.
- Configuring Distributed Safety: system parameterisation, programming, system handling, fault diagnosis, documentation, and acceptance.
- Fail safe peripherals with Distributed Safety.
- Diagnosis (CPU-Diagnosis, Peripheries-Diagnosis, further diagnosis tools).
- Programming: emergency stop, protective door, safety-oriented tripping, passivation, programming features.

PRE-REQUISITE

- Basic knowledge of control and PLC concepts.
- An understanding and experience with STEP 7 Software or completion of the Programming and Troubleshooting Course.

	Booking details:
Course Code	S7-PPDS
Duration	1 day
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

TIA PORTAL DISTRIBUTED SAFETY CONFIGURATION AND PROGRAMMING

COURSE CONTENT:

This course is for engineers and personnel responsible for implementing and maintaining SIMATIC S7 TIA Portal Distributed Safety systems, including:

- Selecting the appropriate architecture
- Selecting the components and understanding their specific purposes and limitations
- Specifying the module and system wiring
- Developing the safety PLC program
- Starting up, supporting, and troubleshooting the system.

Please note: No safety certification is given on this course; it is based on how to use the safety part of the Step 7 Classic software.

COURSE DESCRIPTION:

- Locate and understand the applicability of the detailed documentation and development resources.
- Select and configure the Failsafe Hardware components and understand their application restrictions.
- Properly implement a Safety program in the PLC.
- Document, test, and troubleshoot the system.

PRE-REQUISITE

- Must have complete Simatic TIA Portal Programming (TIA-PRO1)

DESIGNED FOR:

Engineers, technicians, consultants, electricians.

PLC Knowledge and experience is necessary

Booking details:

Course Code	S7-TIAS
Duration	2 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SIMATIC - MOTION CONTROL 1 IN TIA PORTAL

COURSE CONTENT:

In this course you will program the SIMATIC S7-1500 controllers in the TIA Portal. You will be able to precisely control the motion of axes with the integrated motion control functions.

- In this technology course, you will learn step by step the benefits and the use of these functions. After each learning step, you will deepen your knowledge with hands-on programming.'

- After attending the course, you will understand the interaction of the technological functions. You will be able to select and configure appropriate technology objects, such as speed axis, positioning axis and synchronous axis, and integrate them in your program.

DESIGNED FOR:

PROGRAMMERS, COMMISSIONING ENGINEERS, ENGINEERING PERSONNEL, MAINTENANCE PERSONNEL, SERVICE PERSONNEL

COURSE DESCRIPTION:

- Basics of motion control
- Speed-Axis technology object
- Positioning-Axis technology object
- Homing and traversing movements
- Programming with PLC-open
- Error messages and diagnostics
- Communication and libraries
- Output cam and measuring input.
- Closed-loop control and optimization.
- Synchronous-Axis technology object
- Practical exercises on training devices with SIMATIC S7-1500 and SINAMICS drive

PRE-REQUISITE

Knowledge of programming in the SIMATIC TIA Portal (equivalent to knowledge after completion of the TIA-PRO1 course)

If you have not completed the course, please contact us to discuss your skill base before registering for the course.

Booking details:

Course Code	TIA- MC1
Duration	3 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SECTION 3: SCHEDULED AND ON-SITE FACE TO FACE TRAINING – SPECIALIZED IN DRIVES AND MOTOR CONTROL BASED TECHNOLOGY

SINAMICS GH180 DIAGNOSTIC AND SERVICE (PERFECT HARMONY)

COURSE CONTENT:

- Overview of drive and motor
- Personal safety aspects
- Design and function of the SINAMICS PERFECT HARMONY GH180 drive system.
- System Topology: multi winding transformer, pre-charging circuit, power cells, cell bypass, actual value monitoring, hardware identification and circuit diagrams.
- Application, function and interaction of control boards
- Fault log: Analysing alarm and fault messages
- Parameter assignment, diagnosis and data backup (via integral control panel, via TOOL SUITE PC program)
- Extensive lab work on setting parameters and analysing the drive's functions (via integral control panel, via TOOL SUITE PC program)

COURSE DESCRIPTION:

This training course covers operating and servicing of SINAMICS PERFECT HARMONY GH180 drives. You will understand the functional concept and the control structures. You will diagnose its status and analyse its function using the integral cabinet control panel, the TOOL SUITE PC tool and the DEBUG tool.

PRE-REQUISITE

Basic knowledge of electrical engineering.

DESIGNED FOR:

Project, service, maintenance and operating personnel who are exposed to Sinamics GH180 (Perfect Harmony) drive systems and are involved in first line trouble shooting.

Booking details:

Course Code	DR-GH18-DG
Duration	2 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SINAMICS G150/G130/S150 DIAGNOSTIC AND SERVICE

COURSE CONTENT:

- Drive system structure and documentation/service overview
- Basic commissioning, servicing, and diagnosis with AOP30 and the STARTER tool
- Hardware functions, circuit overview and function diagrams
- Setup, electrical connection, EMC
- Using the memory card: Structure and data backup
- Setting up an online connection between PC and SINAMICS S120 via PROFIBUS/Ethernet
- Data backup using the STARTER commissioning tool.
- Structure of a STARTER project: Drive objects, components and DRIVE-CLiQ topology
- Test mode with STARTER: Operator panel, measuring functions.
- Recording signals with the trace function, long-term trace, triggers on bit patterns
- Procedures for replacing control units, power modules and motors.
- Analysis of enabling signals and alarms
- Practical exercises using training devices

DESIGNED FOR:

Project, service, maintenance and operating personnel who are exposed to Sinamics G150 drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

This course provides you with the technical knowledge required for basic commissioning and service activities on SINAMICS chassis and cabinet G150 versions.

Practical exercises to identify faulty modules with outline of fault rectification utilising to replace user replaceable spares.

After the course you know how to commission and optimise a basic drive system, apply spare parts and monitor drive system using the AOP30 operator panel and STARTER tool.

An introduction to PROFIBUS communication is also provided. This maintenance training is designed to increase the fault-finding knowledge of technical personnel aiding in the diagnosis of possible drive operational issues.

PRE-REQUISITE

Basic knowledge of electrical engineering.

Booking details:	
Course Code	DR-G15-DG
Duration	2 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SINAMICS GM150 DIAGNOSTIC AND SERVICE

COURSE CONTENT:

- Design and function of components used within SINAMICS GM150

- Power Topology: pre-charging, line- and motor-side inverter, actual value monitoring, hardware identification and circuit diagrams

- Drive CLiQ-topology, objects and components

- Parameter assignment, diagnosis and data backup via operator panel AOP30 and PC-Tool STARTER

- Functionality and analysis of "set point channel" and "control".

- Analysing alarm and fault messages

- Configuring and analysing the PROFIBUS communication "SINAMICS GM150 - SIMATIC S7"

- Personnel Safety on working with Variable Speed Drives.

DESIGNED FOR:

Project, service, maintenance and operating personnel who are exposed to Sinamics GM150 drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

This training course covers operation and servicing of SINAMICS GM150 drives. You will understand the functional concept and the control structures. You will parameterize the drive, diagnose its status and analyse its function and faults using the operator panel AOP30 and the tool STARTER.

PRE-REQUISITE

Basic knowledge of electrical engineering.

ADDITIONAL COMMENTS

The course combines theory and practical work. This will include a GM150 system overview and the functional description of system components. Sinamics control system exercises will be carried out on a Sinamics GM150 desk simulator that shares the control essentials with the GM150. The simulator is executed as a Sinamics low voltage drive system running on 240V supply including motor for closest real-life feedback in a safe manner. Identification and handling of power components can be done on a customer full size production unit if safe access is made available during the duration of this course.

Booking details:	
Course Code	DR-GM15-DG
Duration	3 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SINAMICS GL150 DIAGNOSTIC AND SERVICE

COURSE CONTENT:

- Design and function of components used within SINAMICS GL150

- Power Topology: pre-charging, line- and motor-side inverter, actual value monitoring, hardware identification and circuit diagrams

- Drive CLiQ-topology, objects and components

- Parameter assignment, diagnosis and data backup via operator panel AOP30 and PC-Tool STARTER

- Functionality and analysis of "set point channel" and "control".

- Analysing alarm and fault messages

- Configuring and analysing the PROFIBUS communication "SINAMICS GL150 - SIMATIC S7"

- Personnel Safety on working with Variable Speed Drives.

DESIGNED FOR:

Project, service, maintenance and operating personnel who are exposed to Sinamics GL150 drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

This training provides you with the basics for understanding operation and maintenance of the drive system SINAMICS GL150. You know the control structure and the communication interface. You will be able to diagnose the state of the drive and to analyse faults. For this purpose, you use the operator panel AOP30 and the PC-Tool STARTER.

PRE-REQUISITE

Basic knowledge of electrical engineering.

ADDITIONAL COMMENTS

The course is split in equal parts into "theory" (classroom presentation) and "lab work. Lab work is carried out on Sinamics GL150 desk simulator that shares the control essentials with the GL150. The simulator is executed as a Sinamics low voltage drive system running on 240V supply including motor for closest real-life feedback in a safe manner. Identification and handling of power components can be done on a customer full size production unit if safe access is made available during the duration of this course.

Booking details:

Course Code	DR-GL15-DG
Duration	3 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SINAMICS S120 DIAGNOSTIC CHASSIS & CABINET

COURSE CONTENT:

- Design and circuit diagrams of SINAMICS S120 chassis units
- Design and circuit diagrams of the SINAMICS S120 CM cabinet units
- Working with the AOP30 Advanced Operator Panel
    - Access to parameters and interfaces
    - Diagnostics, data backup and recommissioning
- Working with the Starter PC Software tool
    - Access to parameters and interfaces
    - Diagnostics, data backup and recommissioning
- Drive Diagnostics with
    - LED Indications
    - AOP Faults and Alarms (Fault Alarm history)
    - Starter Software Fault/Alarm buffer
    - Control Word/Status word and Missing enables
    - Using of trace function for signal recording (Oscilloscope function)
- Working on the converter when service is required:
    - Power unit diagnostics using the Multimeter.
    - Replacing electronic modules and installing replacement parts
    - Replacing the Power Block

DESIGNED FOR:

Service personnel and/or maintenance personnel.

COURSE DESCRIPTION:

This course is specifically designed for personnel supporting SINAMICS S120 drive systems installations with power ratings exceeding 100 kW. The course will cover the various modules in a typical cubicle installation and their function. The focus is on understanding the Sinamics drive systems components to undertake first level targeted trouble shooting utilising block diagrams, the Starter Software and the AOP30 operator panel. This will include the replacement of major system modules. You will be able to back up data and recommission the drive system.

PRE-REQUISITE

General knowledge about drive technology

Booking details:

Course Code	DR-S12-CHA
Duration	2 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SINAMICS S120 DIAGNOSTIC AND SERVICE USING STARTER SOFTWARE

COURSE CONTENT:

- Principles and overview of the SINAMICS S120

- Motors and encoders for the SINAMICS S120

- Diagnostics by visual check and use of LED displays and Multimeter

- Using the memory card: Structure and data backup

- Setting up an online connection between PC and SINAMICS S120 via PROFIBUS /Ethernet

- Data backup using the STARTER commissioning tool.

- Structure of a STARTER project: Drive objects, components and DRIVE-CLiQ topology

- Test mode with STARTER: Operator panel, measuring functions, self-optimization.

- Recording signals with the trace function, long-term trace, triggers on bit patterns

- Procedures for replacing control units, power modules and motors.

- Motor defects: Diagnostic possibilities on site

- Encoder defects: Diagnostics, replacement and adjustment

- Overview of parameters for service purposes

- Analysis of enabling signals and alarms

PRACTICAL EXERCISES USING TRAINING DEVICES

DESIGNED FOR:

Service and maintenance personnel who are exposed to Sinamics S120 drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

Unplanned stoppages of production machines can cost a lot of money. In this course, you learn the proper way to handle a SINAMICS S120 drive system when a fault occurs. You will be able to rectify faults more quickly and make minor adaptations to the parameter assignment. That will save time and money. The practical exercises are conducted on a book size SINAMICS S120 converter system with synchronous and asynchronous motors.

PRE-REQUISITE

Basic knowledge of electrical engineering.

Booking details:

Course Code	DR-S12-DG
Duration	4 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SINAMICS S120 PARAMETERIZING AND COMMISSIONING USING STARTER SOFTWARE

COURSE CONTENT:

- Design of the drive system and overview of documentation and service
- Start-up and parameterization with the STARTER commissioning tool
- Diagnostics and troubleshooting
- Fundamentals of communication via PROFIBUS
- Software functions, closed-loop control and optimization of SERVO and VECTOR drives.
- Start-up of the integral basic positioner (EPOS)
- Practical exercises on the Training Kit

DESIGNED FOR:

Project, commissioning, service, maintenance and operating personnel who are exposed to Sinamics S120 drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

This training course encompasses the basics of the SINAMICS S120 drives system. It provides the technical knowledge required for start-up, parameterization, drive optimization, and troubleshooting.

Practical exercises for reinforcing the knowledge gained are carried out on the SINAMICS S120 Training Case. On completion of the course, you will be able to implement automation solutions with the SINAMICS S120. You can carry out start-up and optimization of the SINAMICS S120 quickly and effectively with skilful use of the STARTER commissioning tool. Trained staff has the potential to increase the availability of S120 systems in your plant.

If you like to use Software START DRIVE in TIA PORTAL, we recommend the course DR-S12-PMT with apart from that same content.

PRE-REQUISITE

Basic knowledge of electrical engineering.

Booking details:

Course Code	DR-S12-PM
Duration	4 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SINAMICS S120 PARAMETERIZING AND COMMISSIONING USING START DRIVE (TIA)

COURSE CONTENT:

- Design of the drive system and overview of documentation and service
- Start-up and parameterization with the Start Drive commissioning tool (TIA Portal)
- Diagnostics and troubleshooting
- Fundamentals of communication via PROFIBUS
- Software functions, closed-loop control and optimization of SERVO and VECTOR drives.
- Start-up of the integral basic positioner (EPOS)
- Practical exercises on the Training Kit

DESIGNED FOR:

Project, commissioning, service, maintenance and operating personnel who are exposed to SINAMICS S120 drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

This training course encompasses the basics of the SINAMICS S120 Drive system. It provides the technical knowledge required for start-up, parameterization, drive optimization, and troubleshooting.

Practical exercises for reinforcing the knowledge gained are carried out on the SINAMICS S120 Training Case. On completion of the course, you will be able to implement automation solutions with the SINAMICS S120. You can carry out start-up and optimization of the SINAMICS S120 quickly and effectively with skilful use of the Start Drive commissioning tool. Trained staff has the potential to increase the availability of S120 systems in your plant.

If you like to use Software STARTER we recommend the course DR-S12-PM with apart from that same content.

PRE-REQUISITE

Basic knowledge of electrical engineering.

Booking details:

Course Code	DR-S12-PMT
Duration	4 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SIMOTION WITH SINAMICS S120 DIAGNOSTIC AND SERVICE USING SIMOTION SCOUT SOFTWARE

COURSE CONTENT:

- Overview of SIMOTION and SINAMICS S120 components

- Engineering system SCOUT and the integrated commissioning tool STARTER

- Structure of a SIMOTION project

- Setting up online connections via PROFIBUS and PROFINET

- Drive objects, components and topology

- Handling the CF-card: structure and backing up files

- Diagnoses with SCOUT and the SIMOTION IT Web browser

- Parameter overview for service purposes

- Service relevant changes to executable control programs

- Diagnosing and replacing of modules, motors, encoders, cables, and HMI

- Analysis of enabling signals and alarms

- Service functions: trace, measurement functions

- Practical exercises on training devices

DESIGNED FOR:

SERVICE AND MAINTENANCE PERSONNEL WHO ARE EXPOSED TO SIMOTION/SINAMICS S120 DRIVE SYSTEMS AND ARE INVOLVED IN FIRST LINE TROUBLESHOOTING.

COURSE DESCRIPTION:

Unplanned downtimes of production machines can be very costly. This course shows you how to diagnose a SIMOTION D automation system and SINAMICS S120 drive system confidently should operational issues occur. You have the potential to rectify faults more quickly and make adjustments to the control program to suit changed operational conditions.

Practical exercises are carried out on a system installed with SIMOTION D, SINAMICS S120 in frame size: "book size".

PRE-REQUISITE

Basic knowledge of automation and drive engineering.

Booking details:

Course Code	: MC-SMO-DG
Duration	4 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

G120 PARAMETERIZING AND COMMISSIONING USING START DRIVE (TIA)

COURSE CONTENT:

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

DESIGNED FOR:

Project, commissioning, service, maintenance and operating personnel who are exposed to Sinamics G120 drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

In this course, we teach the know-how required for configuring and initial start-up of the SINAMICS G120 drive system. Practical exercises using a SINAMICS G120 Training Case are an important component. On completion of the course, you will have mastered safe handling of the Start Drive commissioning tool. This allows you to effectively use different converter functions, optimize closed-loop controls, and thus achieve the greatest possible familiarisation when working with SINAMICS G120 systems.

PRE-REQUISITE

Basic knowledge of electrical engineering.

Booking details:

Course Code	DR-G12-PMT
Duration	2 days or 1-day training with reduced course content also possible (Please contact us for pricing)
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SINAMICS G120 PARAMETERIZING AND COMMISSIONING USING STARTER SOFTWARE

COURSE CONTENT:

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

DESIGNED FOR:

Project, commissioning, service, maintenance and operating personnel who are exposed to Sinamics G120 drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

In this course, we teach the know-how required for configuring and initial start-up of the SINAMICS G120 drive system. Practical exercises using a SINAMICS G120 Training Case are an important component. On completion of the course, you will have mastered safe handling of the STARTER commissioning tool. This allows you to effectively use different converter functions, optimize closed-loop controls, and thus achieve the greatest possible familiarisation when working with SINAMICS G120 systems.

PRE-REQUISITE

Basic knowledge of electrical engineering.

Booking details:

Course Code	DR-G12-PM
Duration	2 days or 1-day training with reduced course content also possible (Please contact us for pricing)
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SINAMICS DCM Parameterizing and Commissioning

COURSE CONTENT:

- 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.

- Using CompactFlash cards: Structure and data backups

- Optimizing current regulation and closed-loop speed control, automatic optimization.

- Function block diagrams: Set point channel, inputs/outputs, free function blocks.

- 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

- Operating states, alarms, and fault codes

- Service functions: Trace, measurement functions, diagnostic memories

- Practical exercises with the AOP30 and STARTER on training equipment

DESIGNED FOR:

Project, commissioning, service, maintenance and operating personnel who are exposed to Sinamics DCM drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

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. 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.

PRE-REQUISITE

Basic knowledge of electrical engineering.

Booking details:

Course Code	DR-DCM-PM
Duration	3 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SINAMICS DCM DIAGNOSTIC AND SERVICE

COURSE CONTENT:

- Structure and functional principles of the SINAMICS DC MASTER converter: Control Unit CUD, Power Module, excitation circuit, interfaces

- Changing parameters, backing up data and performing diagnostics with Operator panels BOP20 and AOP30 and PC program STARTER

- Checking the operating state and enable signals.

- Checking the signal flow using Function diagrams: Set point channel, inputs/outputs, free function blocks.

- Test operation with STARTER Control Panel

- Replacement of Control Unit, fan and fuses

- Drive-end interface to PROFIBUS / PROFINET

- Recording of signals using the trace function, Triggering for faults and bit patterns. Use of the trend recorder function for long-term recording.

- Analysis of alarms and fault messages, read-out of the diagnostic memory

- Practical exercises with the AOP30 and STARTER on training equipment

DESIGNED FOR:

Project, commissioning, service, maintenance and operating personnel who are exposed to Sinamics DCM drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

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. 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.

PRE-REQUISITE

Basic knowledge of electrical engineering.

Booking details:

Course Code	DR-DCM-DG
Duration	3 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SINAMICS G180 (DYNAVERT T) DIAGNOSTIC AND SERVICE

COURSE CONTENT:

- Overview of SINAMICS G180 family.

- Introduction to converter technology.

- Operation of the drive with internal display and remotely via terminal inputs

- How to use WinIMS software. (Parameter upload/download)

- Configuration of the drive including operating modes and drive functions

- Troubleshooting of drive system. (Fault analysis, Signal tracing, Oscilloscope functions)

- Documentation possibilities.

- Maintenance schedule.

- Practical exercises to strengthen the theoretical knowledge.

- Additional topics related to communication possibilities.

DESIGNED FOR:

Project, commissioning, service, maintenance and operating personnel who are exposed to Sinamics G180 drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

The SINAMICS G180 drives are found, above all, in the oil and gas, chemical, power generation sectors, frequently also in conjunction with explosion-proof motors. In this course, you learn the commissioning of this drives and the proper setting of parameters according to the requirements of the application. Learning targets include the interpretation of alarm messages and tracing of circuit diagrams to identify potentially faulty customer replaceable modules.

PRE-REQUISITE

General knowledge about drive technology.

Booking details:

Course Code	DR-G18-DG
Duration	2 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SIMOVERT MASTERDRIVES (PRODUCT DISCONTINUED) MAINTENANCE

COURSE CONTENT:

Principle of operation and function of AC-drives.

– Basic functions of converter, inverter, motor and control

Hardware structure of converters for selected power classes

Software structure: Set points, control and control circuits.

Troubleshooting practical training.

Interpretation of internal fault messages

Functional diagnostics of rectifier, inverter power supply and internal interface modules.

Device-internal hardware tests.

Measures for motor replacement, i.e., data comparison, re-optimisation

Intensive application of the tools Drive Monitor for the analysis of faults and signals

Procedure for the replacement of processor boards

Operational check

Gathering and evaluating fault information

DESIGNED FOR:

Service, maintenance and operating personnel who are maintaining aging Simovert MasterDrive drive systems and are involved in first line trouble shooting.

COURSE DESCRIPTION:

As a maintenance engineer you learn to be able to quickly detect and localize faults in AC-drives (SIMOVERT MasterDrives VC, MC) and check the central functions of an AC-drive system. You will be able to localise the cause of a fault within the drive system (converter, motor) and to rectify faults to the extent possible with user replaceable spares. The course is run on request for customers having an installed base with the potential utilising in part their production units for demonstrational purposes during the course.

PRE-REQUISITE

General knowledge about drive technology.

Booking details:

Course Code	DR-MD-IH
Duration	2 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SECTION 4: SCHEDULED AND ON-SITE FACE TO FACE TRAINING – PCS 7 SOFTWARE BASED TECHNOLOGY

SIMATIC PCS 7 SYSTEM

COURSE CONTENT:

- System overview and architecture: subsystems for automation, operation, communication and engineering.
- Configuration concept: from the field level up to the HMI level.
- Network and hardware configuration.
- Process Object View as a plant-based structure of the project.
- Standardising by library and block concept, process tag types, models.
- Automation solutions by graphical configuration with CFC and SFC.
- Monitoring and controlling.
- Distributed engineering (Multi Project).
- HMI configuration: graphics, trending, alarming, reports.
- Configuration of client/server and server redundancy.

PRE-REQUISITE

Basic understanding of process control systems.

COURSE DESCRIPTION:

As a user of the Process Control System SIMATIC PCS 7, you will learn how to apply the engineering features in a structured and efficient way. Supported by examples and exercises, demonstrating that the process automation of a plant is realised from the field level up to the HMI level. The key aspects of SIMATIC PCS 7 are covered, e.g. its system-wide consistency, plant-oriented configuring, data and project management and the co-operation between the various components and tools.

DESIGNED FOR:

Engineering level course predominantly for personnel involved in the design and implementation of PCS7 process control system: control engineers, technicians, consultants. Also recommended for the operations and maintenance personnel requiring more in-depth knowledge of the system. e.g., for system modification tasks.

Booking details:	
Course Code	ST-PCS7SYS
Duration	9.5 days
Delivery	Training locations in major capitals. On-site training is available. (Please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SIMATIC PCS 7 SERVICE

COURSE CONTENT:

- Overview of Process Control Systems Architecture - I/O, field communications, controllers, Operator Station-Automation Station communications, Operator Station (OS) service, OS client/ server communications, OS client/ multi-client

- Operations level Hardware and Software diagnostics - viewing and interpreting OS system alarm messages (Alarm Journal)

- Engineering level Hardware and Software diagnostics

- Replacing hardware component: I/O module, communications card, CPU, etc - what to do, what to watch for, compatibility of parts, etc.

- Restoring PLC program, restoring OS application from backup

COURSE DESCRIPTION:

As a maintenance person for Process Control System SIMATIC PCS 7 you will get general familiarisation with the system overall: hardware, system software and application software. You will also learn how to apply system monitoring and diagnostic features in an efficient way.

Supported by a variety of examples and hands-on exercises.

PRE-REQUISITE

Basic understanding of process control systems.

DESIGNED FOR:

Operations and maintenance personnel involved in corrective and preventive maintenance of all items in the system, with emphasis on locating and correcting problems by replacement at the hardware level. The training course will include instructions on the use of diagnostics tools available in the PCS 7 system.

Booking details:

Course Code	ST-PCS7SRV
Duration	4.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SIMATIC PCS 7 SIMIT

COURSE CONTENT:

- Interfaces to controllers or other applications Introduction of the 3 simulation levels and their function

- Creation of templates and efficient engineering by import functions Working with libraries provided by SIMIT.

- Creation of own components using the Component Type Editor

- Insight into the message system and the Automation Control Interface of SIMIT Creation of small simulation projects

- Configuration of a distributed simulation using the Virtual Controller

DESIGNED FOR:

DECISION MAKERS, SALES PERSONNEL
PROJECT MANAGER, PROJECT STAFF
CONFIGURING ENGINEERS, PROGRAMMER

COURSE DESCRIPTION:

This course provides you a summary of the functions and libraries of the simulation software SIMIT.

By practical exercises you will learn about the design of simulations / simulation models for testing the PCS 7 perfect interplay of all components integrated automation software. The in SIMIT enables you to produce more in the highest quality durably and to establish new products on the market considerably faster.

On completion of the course, you are able to: create own components and templates to use the available features for efficient engineering in SIMIT

To establish couplings between the simulation in SIMIT and automation systems in PCS 7, which are emulated by PLCSIM or the Virtual Controller.

Pre - requisite:

Attendance of training course ST-PCS7SYS recommended Basic knowledge of process control engineering

Practical experience in SIMATIC PCS 7 project engineering.

Basic knowledge of APL, as provided in the System course or in the APL-Workshop

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Booking details:

Course Code	ST-PCS7SIM
Duration	3 Days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SIMATIC PCS 7 SAFETY

COURSE CONTENT:

- Functional safety Basics from IEC61508 and IEC61511, Layer of Protection Analysis and Risk graph by means of a safety instrumented function System architecture and diagnostics in safety components (Hardware, Software, Communication)

- Overview about F-Hardware

- Parameter in HW-Configuration (safety mode, sensor evaluation, addressing, monitoring time, H-parameter, Wiring and Voting)

- Safety program (F-Quits, voting blocks, block typical, Safety Data Write, communication)

- Safety mechanisms (F-Shutdown, Partial Shutdown Groups, passivation, reintegration, block typical)

- Safety Matrix, Calculate and adjust F-times using S7ftimeb.xls (reaction-, monitoring times)

COURSE DESCRIPTION:

In this course you become familiar with the PCS 7 conform generating of failsafe applications with, CFC and Safety Matrix. The theoretical parts of the training are backed up with practical exercises. These exercises are done with failsafe and optional highly available CPU 410-5H with failsafe signal modules connected via Profibus and PROFIsafe. After the course you will be able to evaluate safety functions and adjust security relevant times.

PRE-REQUISITE

Attendance of training course ST-PCS7SYS. General basic knowledge of process automation.
Basic knowledge of PCS 7 OS. Good experience in AS configuration within PCS 7.

DESIGNED FOR:

Sales employees, Project managers, project staff Programmer, Commissioning engineers, configuration engineers, technical consultants and promoters, who use safety technology in process control or attend customers using safety technology PCS 7 specialists within the scope of the Siemens partner program who are engineering projects with PCS 7 and F-Systems

Booking details:	
Course Code	ST-PCS7SAF
Duration	4 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SIMATIC PCS 7 ADVANCED AS ENGINEERING

COURSE CONTENT:

- **PCS 7 Project handling**

Multi project engineering and Multiuser engineering

Version Trail and Version Cross Manager

Access protection and Block encryption

License management

- **Hardware configuration**

Integration of Profinet and field devices

Update of the Hardware catalog

High-Precision Time Stamping

- **Efficient engineering**

Libraries in SIMATIC PCS 7 V8.0 Extended User Authorization Concept

Run sequence and behavior when maximum cycle time exceeded.

- **Advanced alarm engineering**

Generating additional messages

Message configuration

Managing messages in SIMATIC Manager

- **Application of APC Library**

Characterizing Control Loops

Overview of the APC tools in the PCS 7 Libraries and APC-Examples

PID algorithm

Control Performance Monitoring (CPM) Controller optimization using the PID Tuner

- **SFC Advanced**

Operating State Logic and state changes in SFC Configuration of SFC-Types

DESIGNED FOR:

Commissioning engineers,
Configuring engineers
Service personnel
Maintenance personnel.

COURSE DESCRIPTION:

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 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.

PRE-REQUISITE

Attendance of training course ST-PCS7SYS is recommended Basic knowledge of process control engineering
Practical experience in PCS 7 project engineering

Booking details:

Course Code	ST-PCS7ASE
Duration	4.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SIMATIC PCS 7 BATCH

COURSE CONTENT:

- Batch terminology, S88 terms,
- SIMATIC Batch relationship with respect to AS and OS Windows and BATCH Application Security
- Basic procedure for developing, planning and configuring a SIMATIC BATCH project Procedural model, operate the Batch Control Center (BCC)
- Creating materials, assign codes and modify their properties Recipe editor and master recipe.
- Production orders, batches chaining control of batch processing Operate the BATCH OS Controls
- Operate the reports and archiving system.

DESIGNED FOR:

Project managers, project staff Technologists
Configuring engineers,
Commissioning engineers.

COURSE DESCRIPTION:

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

Define the terms and procedural model according to the ISA S88.01
Define hardware and software requirements to implement SIMATIC Batch Configure and use Simatic Logon
Configure phase logic in SFC Type and CFC
Perform batch planning and configuration.
Use the Batch Control Center
Create a recipe
Define and configure batch materials
Generate standard reports and messages Run and manage a batch.

PRE-REQUISITE

Prior attendance on the Siemens PCS7 System Course
(ST-PCS7SYS)

Booking details:

Course Code	ST-PCS7BAT
Duration	4.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SIMATIC PCS 7 ADVANCED OS ENGINEERING

COURSE CONTENT:

- Basics of OS configuration
- The Client Server Configuration the Server Redundancy
- Extended configuring of Multi-User Projects Life Beat Monitoring
- Time synchronization
- User Administration and the SIMATIC Logon option WinCC Autostart and PCS 7 OS as Service
- The Web Option
- The Long-term Archiving
- The Graphic configuration with selected graphic objects Basic settings and properties
- Dynamics
- Extended status display and extended analog value display Group displays.
- The creation of block icons and faceplates in conformance with APL

DESIGNED FOR:

- Commissioning engineers
- Configuring engineers
- Service personnel
- Maintenance personnel

COURSE DESCRIPTION:

As a 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.

PRE-REQUISITE

Attendance of training course ST-PCS7SYS recommended. Basic knowledge of process control engineering
Practical experience in PCS 7 project engineering

Booking details:

Course Code	ST-PCS7OSE
Duration	4.5 days
Delivery	Training locations in major capitals. On-site training is available (please contact us for pricing)
Investment	Please see Training Price List.
Phone	Siemens Service – Training, 1300 369 515
Email	sitrain.au@siemens.com

SECTION 5: BOOKING INFORMATION

Bookings are handled through our online booking tool.

This can be found on our website by clicking on "Book a SITRAIN course" or "Book remote training".

Our website can be found at https://www.siemens.com/au/en/company/training/sitrain.html

Alternatively, you can contact us via phone or email as detailed below.

Phone: Siemens Service – Training, 1300 369 515

Email: sitrain.au@siemens.com

Please visit our website for the training schedule www.siemens.com.au/sitrain

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NOTES

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