



AUTOMATION & FACTORY SOLUTIONS

## Siemens HMI with WinCC Comfort/Advanced Outline

This two day course will provide students the skills necessary to develop and maintain applications with the Siemens TIA Portal WinCC Comfort/Advanced software.

**Course Length & Time:** Two days. 8:30 AM - 4:30 PM

### Topics:

- WinCC Comfort/Advanced HMI System Overview
- Siemens HMI Panel Overview
- WinCC flexible Migration to Comfort/Advanced
- Project Creation
- Communication Setup
- Graphics Design
- Library Utilization
- Alarm System
- Tag Logging
- Recipe Management
- User Administration
- VB Scripting
- Cross Reference
- Multi-Language Setup
- Project Transfer
- TIA Portal Step 7 Integration
- WinCC Comfort/Advanced Options:
  - Sm@rt Server
  - Audit

**Prerequisite:** None

**Part #** PCC-TRN-SCH2-HMTP

Complete training schedule can be found at [www.pccweb.com/events](http://www.pccweb.com/events) | Registration can be done online or by contacting PCC at (262) 251-3000 or [gcgevents@gogcg.com](mailto:gcgevents@gogcg.com).

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## Siemens WinCC Unified Outline

This two day course will provide students the skills necessary to develop and maintain applications with the Siemens TIA Portal WinCC Unified software.

**Course Length & Time:** Two days. 8:30 AM - 4:00 PM

### Topics:

- WinCC Unified HMI System Overview
- Siemens HMI Panel Overview
- Project Creation
- Communication Setup
- Graphics Design
- Library Utilization
- Alarm System
- Tag Logging
- Recipe Management
- User Administration
- Scripting
- Cross Reference
- Multi-Language Setup
- Project Transfer
- TIA Portal Step 7 Integration

**Prerequisite:** None

**Part #** PCC-TRN-SCH2-WUNI

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## Siemens S7-1500 Programming with TIA Portal Outline

This fast paced three day course assumes the student has a basic knowledge of programming PLCs and focuses on how to use TIA Portal Step 7 Professional software to create a complete PLC system. The focus includes configuration of the Siemens S7-1500 PLC hardware, PROFINET configuration, programming using ladder logic and basic diagnostic functions

**Course Length & Time:** Three days. 8:30 AM - 4:30 PM

### Topics:

- S7 Family Hardware Overview
- TIA Portal Project and Portal Views
- Configuring the S7-1500 PLC Hardware
- Configuring a PROFINET Network
- S7-1500 Addressing & Memory
- Using Various Programming Methods (Linear, Partitioned, Structured)
- Using Basic Instruction Set (Contacts, Coils, Timers, Counters)
- How To Use Function (FC) & Function Block (FB)
- Using IEC Functions & Function Blocks
- Using Libraries
- Using Simatic Automation Tool
- Data Block Usage & Data Types
- Understanding the Most Used Organization Blocks
- Analog Value Processing
- Monitoring Logic & Using Watch Tables
- Use of Trace
- Online Diagnostics & Troubleshooting
- Use of PLCSIM Simulation Tool
- Using the Integrated Web Server on the PLC
- Using a Multi-Instance Function Block (Time Permitting)

**Prerequisite:** Basic Understanding of PLCs

**Part #** PCC-TRN-SCH3-15TP

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## Siemens S7-1200 Jumpstart with TIA Portal Outline

This one day course is a fast paced jumpstart to programming the S7-1200 PLC with TIA Portal Step 7 Basic software. It is assumed that the student is already familiar with programming PLCs and wants to understand how the TIA Portal Software can be used to program the S7-1200 PLC.

**Course Length & Time:** One day, 8:30 AM - 4:30 PM

### Topics:

- S7-1200 Family Hardware Overview
- TIA Portal Project & Portal Views
- Configuring the S7-1200 PLC Hardware
- S7-1200 Addressing & Memory
- Using Basic Instruction Set (Contacts, Coils, Timers, Counters)
- Using Simatic Automation Tool
- Function (FC) & Function Block(FB)
- Data Blocks (DB) & Data Types
- Monitoring Logic & Using Watch Tables
- Online Diagnostics & Troubleshooting
- Using the Integrated Web Server on the PLC
- Configuring a PROFINET Network

**Prerequisite:** Basic Understanding of PLCs

**Part #** PCC-TRN-SCH1-12TP

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## Siemens Step 7 Classic for Maintenance Personnel Outline

This three day course assumes the student has a very basic understanding of PLCs and will introduce students to the Step 7 software package, used to program and maintain the S7-300/400 PLC systems. The class focuses on maintaining & troubleshooting the S7 PLC using Step 7.

**Course Length & Time:** Three days. 8:30 AM - 4:30 PM

### Topics:

- S7 Family Hardware Overview
- S7 Hardware Installation & Maintenance
- Remote I/O Installation & Maintenance
- Using Simatic Manager
- Editing/Adding Symbols to a Project
- Overview of PROFIBUS & PROFINET Networks
- Using a Variable Table for Troubleshooting
- Overview of S7 Addressing
- Why Various Programming Methods Are Used (Linear, Partitioned, Structured)
- Basics of Organization Blocks
- Basics of Functions (FC) & Function Blocks (FB)
- Basics of Data Blocks
- Monitoring PLC Program Blocks
- Overview of Basic Instruction Set (Contacts, Coils, Timers, Counters)
- Overview of IEC Functions & Function Blocks
- What Are Libraries Used For
- Rewiring a User Program
- Comparing Programs
- Using Cross Reference, Usage Table & Program Structure Tools
- Troubleshooting a S7 PLC Using LEDs
- Troubleshooting a S7 PLC Using Step 7
- Troubleshooting a S7 PLC Using the Integrated Web Server
- How to Force a Value

**Prerequisite:** Basic Understanding of PLCs

**Part #** PCC-TRN-SCH3-S7CM

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## Siemens WinCC Professional SCADA Outline

This three day course will provide students the skills necessary to develop and maintain applications with the Siemens WinCC Professional SCADA software in TIA Portal.

**Course Length & Time:** Three days. 8:30 AM - 4:30 PM

### Topics:

- WinCC Pro System Overview
- Help System
- Project Creation
- Screen Design
- Menus and Toolbars for Runtime
- Library Utilization
- Faceplates
- Indirect Addressing Methods
- Cross Reference
- Alarm Logging
- Tag Logging
- C Scripting
- VBScript
- Scheduled Tasks
- Recipes
- Reporting
- User Administration
- Multi-Language
- TIA Portal S7 PLC and WinCC Tag Integration
- Communication Channels

**Prerequisite:** None

**Part #** PCC-TRN-SCH3-SWCP

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## Siemens WinCC SCADA V7.x Outline

This three day course will provide students the skills necessary to develop and maintain applications with the SIEMENS WinCC SCADA software.

**Course Length & Time:** Three days. 8:30 AM - 4:30 PM

### Topics:

- WinCC System Overview
- Information System
- Step 7 and WinCC Tag Integration
- Communication Channels
- WinCC Explorer
- Graphics Designer
- Library Utilization
- Customized Objects
- Faceplates
- Indirect Addressing Methods
- Cross Reference
- Alarm Logging
- Tag Logging
- C Scripting
- VBScript
- Reporting
- User Administration
- Multi-Language
- WinCC Diagnostic Tools

**Prerequisite:** None

**Part #** PCC-TRN-UNSCH3-WCSP

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## Siemens S7-1500 Safety with TIA Portal

This two day course will provide students the skills necessary to develop and maintain applications with the Siemens TIA Portal software & Safety PLCs.

**Course Length & Time:** Two days. 8:30 AM - 4:30 PM

### Topics:

- Why Safety
- Machine Safety Standards Overview
- PROFIsafe
- Safety Controllers
- Safety I/O Systems
- Safety Hardware Configuration
- Safety Programming & Tags
- Reintegration After Error
- Safety Instructions
  - E-Stop
  - Feedback Monitoring
  - Working with Safety Door Switches
- Data Transfer Between Safety & Standard Program
- Fail-safe Communications Between Processors
- Calculating Response Time
- Testing & Diagnostics

**Prerequisite:** PCC Class: Siemens S7-1500 Programming with TIA Portal or equivalent Siemens course

**Part #** PCC-TRN-SCH3-SFTP

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