# PLC485: SIEMENS PCS7 Training Course

**Contact Us Today:** info@PiControlSolutions.com, Tel: (832) 495 6436

## Duration:
Online / Remote training course: 4 Days (6 hours per day)

**Audience:** Process control engineers, Advanced process control engineers, Instrument engineers and DCS / PLC technicians.

## Training course description:

This process control training course is designed to cover all basics and advanced functions of SIEMENS PCS7. Trainees need to have some PLC programming experience as covered in the training course.

All basic and advanced functions necessary to create a complete PLC control logic using function blocks and/or ladder logic will be explained and demonstrated.

Using the Siemens PCS7 software, the trainees will learn how to configure PCS7 and design the visualization system (HMI or SCADA) predominantly WinCC. They will learn how to build tags, design PID and cascade control loops, build and test advanced process control loops and logic and create bumpless transfer in PCS7.

Also, the trainees will learn how to build graphics, alarms, trends and logs within WinCC. All designed functionalities will be demonstrated using simulators and runtime emulators.

The goal of this process control training course is to teach and demonstrate how to build all process control logics inside PCS7.  Moreover, this process control training course will give you knowledge and experience to build visualization system in WinCC.

## Learning outcomes:

Trainees get a chance to learn how to:

- Configure and setup basic and advanced process control logic within Siemens PCS7.

- Tune any PID controller and / or complex control logic using bumpless transfer.

- Design and configure WinCC and understand it's functionalities such as tag creation, alarms configurations, designing of static and dynamic graphics, trends, logs.

**Training course program:**

| Day | Topics |
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| 1 | Introduction on SIMATIC PCS 7 Architecture:<br>• Overview of DCS<br>• Architecture of SIEMENS DCS in detail<br>• Overview of different interface modules available in PCS 7<br>• Brief study on different stations available<br><br>Introduction to PCS 7 Overview:<br>• Introduction to SIMATIC manager<br>• Basic structure of SIMATIC manager<br>• Different views of SIMATIC Manager<br>• Planning the Project |
| 2 | Configuring different Stations and Hardware:<br>• Creating the project<br>• How to Work in the Various Views<br>• Configuration overview and AS configuration<br>• Downloading the hardware configuration of the AS<br>• Working in the Plant Hierarchy and its settings<br>• Inserting additional hierarchy folders<br><br>Overview of different Industrial Networks and Configuration:<br>• Brief introduction about different IM modules<br>• Configuration of PROFIBUS DP and PROFINET networks<br>• Remote IO configuration and addressing<br>• Creating symbol tables for various parameters<br>• Import and export of symbol table |
| 3 | Working on Continuous Function Chart (CFC):<br>• Inserting new CFC charts in the Plant Hierarchy<br>• Working with libraries<br>• Inserting the blocks into the CFC and Assigning parameters for the blocks<br>• Working on different block available in Basic library<br>• Compiling, Downloading and Testing the charts<br>• Working in standard library for Analogue and Digital I/O channel configuration<br>• Working on different Motor and Valve blocks<br><br>Working on Sequential Function Charts (SFC):<br>• Working with the SFC Editor<br>• Important functions in the SFC Editor<br>• Properties of steps and transitions<br>• Assigning parameters to the steps of the SFC chart<br>• Creating the sequential control systemin the SFC chart |

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| 4 | Configuring the Operator Station:<br>• Introduction to the OS project editor<br>• Working and Structure of the OS-WinCC Explorer<br>• Function of process picture<br>• Setting the OS activation for the ES<br>• Working in general with the Graphics Designer<br>• Working with Tag interconnection<br>• Creating Graphics Elements and Symbol Dynamics<br><br>Alarms and Trends and Faceplates:<br>• Understanding alarms and messages<br>• Configuration of Trends and Alarm configuration<br>• Data logging and Alarm storage<br>• Creating Faceplates for various objects<br>• Creating various user Administrator |
| 5 | Execution of different Control algorithm available:<br>• Detailed theory about proportional integral derivative.<br>• Detailed overview of control loop methods.<br>• Real time configuration of PID<br>• Execution of PID with different models |