

## SIEMENS TIA PORTAL PROGRAMMING – PART 1

### COURSE SPECIFICATIONS

**Course Code:** TIA-PRO1

**Course Length:** 5 Days

### TARGET AUDIENCE

This course is aimed at programmers, commissioning engineers, and configuring engineers.

### PRE-REQUISITES

ST-PLCINTRO Programmers and System integrators involved with SIMATIC S7 programmable controllers.

### COURSE OBJECTIVES

In this course you will work with the SIMATIC STEP 7 software based on TIA Portal.

The Totally Integrated Automation Portal (TIA Portal) forms the work environment for integrated engineering with SIMATIC STEP 7 and SIMATIC WinCC. In this first part of the SIMATIC TIA Portal programming training, we teach you the handling of the TIA Portal, basic knowledge about the structure of the SIMATIC S7 automation system, configuration and parameterization of hardware, and the basics of standard PLC programming.

You also receive an overview of HMI, 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).
- Perform simple commissioning of TIA components.

### LEARNING OUTLINE

1. Overview and Significant Performance Characteristics of the SIMATIC S7 System Family
2. The Components of the TIA Portal: STEP 7, WinCC, communication
3. Program Execution in Automation Systems
4. STEP 7 Block Types and Program Structuring
5. Binary and Digital Operations in the Function Block Diagram (FBD)
6. Programming of Parameterizable Blocks
7. Data Management with Data Blocks
8. Programming Organizational Blocks
9. Test Tools for System Information, Troubleshooting, and Diagnostics
10. Hardware Configuration and Parameterization of the SIMATIC S7-1500 Modules
11. PROFINET IO System (EP200SP), a Touch Panel, and a Drive (G120 Drive)
12. Program Documentation and Saving
13. Deeper Understanding of Contents Through Practical Exercises on TIA System Model

### CERTIFICATION

Successful participants will receive an **international Siemens certificate**. Siemens LTD is accredited by **merSETA** to fulfil the functions as contemplated in SAQA regulation 13 for the standards and qualification as detailed in the statement of accreditation.

### MERSETA TRAINING PROVIDER

Onetrust Training Solutions has received full accreditation as a **merSETA Training Provider**. (Certification number: 17-QA/ACC/2313/21.) We are in the process of extending our scope of accreditation for most of our individual training courses and skills programmes.

### CONTACT DETAILS

Further enquiries may be directed to:

#### ONETRUST TRAINING SOLUTIONS (PTY) LTD

Vanderbijlpark | South Africa

**Tel:** +27 16 982 1651

**Cell:** +27 83 565 0915

**Email:** [admin@otts.co.za](mailto:admin@otts.co.za)