



# SIMATIC S7 PLC Programming—Basic Level based on S7-1500



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## Why Attend

The main aim of this course is to provide the participants with basic knowledge about Siemens PLC Programming, to create or to modify Step 7 PLC programs and to find PLC program faults.

## Course Methodology

The course is hands on with great emphasis on the practical aspects of Programmable Logic Controller applications. The course is based around Siemens S7-1500 range of PLCs using TIA Portal.

## Course Objectives

By the end of the course, participants will be able to:

The course objectives are to provide the participants with the knowledge and skills to enable them to work with Siemens S7 (1500 / 1200 controller series).

On completion of this course the participant will be able to 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 predominantly in ladder diagram (LAD)
- Perform simple commissioning of TIA components
- Monitoring PLC software using Code or Variable Tables
- Forcing Variables

## Target Audience

Electrical and instrumentation technicians and engineers

## Target Clients

- Oil & Gas
- Food & Beverage
- Cement
- Chemical Industry
- Mining
- Fertilizers
- Pharmaceutical Factories.
- Water and Waste Water station
- Customers who already have in their plants S7-1200 / 1500

## Note

SIMATIC S7 knowledge

This course involves practical and hands-on training on real PLC stands.

## Course Outline

- Overview of the SIMATIC S7 system family
- The components of the TIA Portal: STEP 7, WinCC
- The basic structure of a SIMATIC S7-1500
- Role of input and output modules
- Presentation of programming languages LAD, FBD, STL programming in TIA Portal
- Global variable categories, data types and addressing modes
- Elementary logic instruction set



- Numerical Instructions
- Arithmetic Instructions
- Program execution in automation systems
- Hardware configuration and parameterization of the SIMATIC S7-1500 modules, a PROFINET IO system
- STEP 7 block types and program structuring
- Binary and digital operations based on TIA Portal
- Programming of different block types FCs / FBs
- Error organization blocks
- Output diagnostic messages
- Distributed Peripherals
- Data management with data blocks
- Programming organization blocks
- Test tools for system information, troubleshooting and diagnostics
- Using TIA PORTAL software for troubleshooting
- Detecting and eliminating software errors, that lead to the CPU Stop state
- Detecting and eliminating logical software errors
- Saving and documenting program changes that were made
- Program documentation and saving
- Deeper understanding of contents through practical exercises on TIA system model
- Open Discussion...



## Location & Date

|                   |         |       |                     |
|-------------------|---------|-------|---------------------|
| 27 - 31 Oct, 2019 | English | Dubai | Meirc Offices Dubai |
| 19 - 23 Jan, 2020 | English | Dubai | To be assigned      |
| 6 - 10 Sep, 2020  | English | Dubai | To be assigned      |

## Fees: US\$ (including coffee breaks and a buffet lunch daily)

|                        |           |
|------------------------|-----------|
| Per participant - 2019 | US\$ 3800 |
| Per participant - 2020 | US\$ 3900 |

Fees + VAT as applicable

UAE Tax Registration Number 100239834300003



## Courses in Hands-on Automation and Process Control

| Dates             | Course Name  | Language | Location | Fees      |
|-------------------|--|----------|----------|-----------|
| 8 - 12 Sep, 2019  | SIMATIC S7 PLC Programming—Advanced Level based on S7-300/ 400 | English  | Dubai    | US\$ 3900 |
| 15 - 19 Sep, 2019 | Industrial Profibus & Profinet Courses                         | English  | Dubai    | US\$ 3900 |
| 22 - 26 Sep, 2019 | Human Machine Interface based on SIMATIC WinCC TIA             | English  | Dubai    | US\$ 3900 |
| 6 - 10 Oct, 2019  | Human Machine Interface based on SIMATIC WinCC flexible        | English  | Dubai    | US\$ 3900 |
| 13 - 17 Oct, 2019 | SCADA Systems based on SIMATIC WinCC Professional              | English  | Dubai    | US\$ 3900 |
| 20 - 24 Oct, 2019 | Industrial Weighing Course                                     | English  | Dubai    | US\$ 3900 |
| 17 - 21 Nov, 2019 | SIMATIC S7 PLC Programming—Advanced Level based on S7-1500     | English  | Dubai    | US\$ 3900 |
| 24 - 28 Nov, 2019 | SIMATIC S7 PLC Programming—Basic Level based on S7-300/400     | English  | Dubai    | US\$ 3900 |
| 26 - 30 Jan, 2020 | SIMATIC S7 PLC Programming—Advanced Level based on S7-1500     | English  | Dubai    | US\$ 3900 |
| 2 - 6 Feb, 2020   | Human Machine Interface based on SIMATIC WinCC TIA             | English  | Dubai    | US\$ 3900 |
| 9 - 13 Feb, 2020  | SIMATIC S7 PLC Programming—Basic Level based on S7-300/400     | English  | Dubai    | US\$ 3900 |
| 16 - 20 Feb, 2020 | SIMATIC S7 PLC Programming—Advanced Level based on S7-300/ 400 | English  | Dubai    | US\$ 3900 |
| 23 - 27 Feb, 2020 | Human Machine Interface based on SIMATIC WinCC flexible        | English  | Dubai    | US\$ 3900 |
| 1 - 5 Mar, 2020   | SCADA Systems based on SIMATIC WinCC Professional              | English  | Dubai    | US\$ 3900 |
| 22 - 26 Mar, 2020 | Designing and commissioning Variable Speed Drives              | English  | Dubai    | US\$ 3900 |
| 7 - 11 Jun, 2020  | Industrial Profibus & Profinet Courses                         | English  | Dubai    | US\$ 3900 |
| 5 - 9 Jul, 2020   | Designing and commissioning Variable Speed Drives              | English  | Dubai    | US\$ 3900 |
| 9 - 13 Aug, 2020  | Industrial Weighing Course                                     | English  | Dubai    | US\$ 3900 |
| 13 - 17 Sep, 2020 | SIMATIC S7 PLC Programming—Advanced Level based on S7-1500     | English  | Dubai    | US\$ 3900 |
| 4 - 8 Oct, 2020   | Human Machine Interface based on SIMATIC WinCC TIA             | English  | Dubai    | US\$ 3900 |
| 8 - 12 Nov, 2020  | SIMATIC S7 PLC Programming—Basic Level based on S7-300/400     | English  | Dubai    | US\$ 3900 |
| 15 - 19 Nov, 2020 | SIMATIC S7 PLC Programming—Advanced Level based on S7-300/ 400 | English  | Dubai    | US\$ 3900 |



## Courses in Hands-on Automation and Process Control

| Dates             | Course Name   | Language | Location | Fees      |
|-------------------|---|----------|----------|-----------|
| 22 - 25 Nov, 2020 | Human Machine Interface based on SIMATIC WinCC flexible | English  | Dubai    | US\$ 3900 |



# Meirc Timeline

