

Siemens Automation Cooperates with Education (SCE) | 02/2026

SCE Course Contents

Advance Training Course for PLC programming
with SIMATIC S7 and TIA Portal

TIA Portal course

2 days

Prerequisites

- Basic knowledge of Windows PC
- Basic course SIMATIC S7 with TIA Portal

SCE Learn-/Training Documents

- Hardware configuration S7-1200 module: 011-100
- Hardware configuration S7-1500 module: 012-100
- Hardware configuration S7-300 module: 013-101
- Process description module: 020-100
- Programming S7-1200 modules: 031-420 | 031-500 | 031-600
- Programming S7-1500 modules: 032-420 | 032-500 | 032-600

Contents

- Brief review of the basic course with TIA Portal
- Data types and data blocks in SIMATIC S7
- Program example with data block in TIA Portal
- Application examples for structured programming with FCs, FBs and DBs
- Extended instruction set and mathematical functions
- Reading, outputting and scaling analog values
- Application example for analog value processing in TIA Portal
- Test and diagnostic functions in TIA Portal
 - Monitoring hardware online
 - Module and operating status
 - Monitoring, controlling and forcing inputs and outputs
- Exercises for troubleshooting and diagnostics with TIA Portal
- Error localization and error elimination at SIMATIC S7
 - Hardware diagnostics and diagnostic buffer
 - Additional functions in the target system of the controller
 - Comparing reference data, block assignment and program structure as well as blocks
- Error organization blocks at SIMATIC S7
- Diagnostics and error messages for SIMATIC S7 via the integrated Web server

Note:

These Learn-/Training Documents are available in the SCE Internet: [siemens.com/sce/module](https://www.siemens.com/sce/module)

This program serves as the reference and guideline for the course, in which we place great value on practical exercises and application examples.

We will of course be pleased to cover any individual suggestions, requests and questions from participants during the event.

Additional SCE courses are available in the SCE Internet: [siemens.com/sce/courses](https://www.siemens.com/sce/courses)

Increase your automation technology expertise and inspire your students.

