

## SIMATIC TIA Portal Safety Engineering (US-TIA-SAFETY)

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### Type

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Instructor-led Learning

### Duration and Continuing Education Units (CEU)

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3 Days  
2 CEUs

### Target Group

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- Engineer
- Maintenance

### Short Description

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The Totally Integrated Automation Portal (TIA Portal) forms the work environment for integrated engineering with SIMATIC STEP 7 and SIMATIC WinCC. In this course, you will learn about configuring, programming, starting up, diagnosing and troubleshooting of the failsafe CPUs of the SIMATIC S7 Safety PLC (no H systems) and the failsafe, distributed ET 200 systems.

### Objectives

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- Starting up failsafe CPUs of the SIMATIC PLC
- Programming of safety-related programs in the languages F-FBD and F-LAD
- Diagnosing and troubleshooting of safety-related programs.

### Content

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- Overview and guidelines
- Safety Integrated (Operating principle and system configuration)
- Configuring of the failsafe components with STEP 7 Safety
- Programming of a safety-related user program
- Failsafe communication PROFIsafe (CPU-CPU communication, master-slave communication)
- Diagnostics facilities (CPU diagnostics, I/O diagnostics, advanced diagnostics)
- Exercises for I/O configuration, communication, troubleshooting
- Programming examples (emergency stop, protective door, safety-related shutdown, passivation, special programming features)
- Deeper understanding of contents through practical exercises on a SIMATIC S7-1500 F-CPU

### Mandatory Prerequisites

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[SIMATIC Programming 1 in the TIA Portal: TIA-PRO1](#)

OR

[SIMATIC Service 1 in the TIA Portal: TIA-SERV1](#)

### Language

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English

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