



TRAINING COURSE

T142 SIS TÜV Rheinland functional safety engineer

A four day course to learn the principles and requirements of functional safety according to IEC 61508 / IEC 61511.



T142 SIS TÜV Rheinland functional safety engineer

The goal of this course is to learn the principles and requirements of functional safety according to IEC 61508 / IEC 61511. This includes the complete safety lifecycle in the context of Safety Instrumented Systems (SIS) projects.

Course attendance is open to all interested parties. Achieving the threshold mark for the examination and meeting the prerequisites as detailed below will result in the candidate becoming a certificated TÜV Rheinland functional safety engineer.

Learning objectives

Upon completion of this course, the participants should be able to:

- Describe the principles of Functional Safety Management (FSM) and key features of IEC 61508 / IEC 61511
- Describe the requirements of the Safety Lifecycle
- Explain and determine Safety Integrity Levels (SIL) with different methods
- Outline the key deliverables from the Safety Lifecycle, roles and responsibilities
- Describe a Safety Requirement Specification (SRS)
- Appreciate the need for Safety Lifecycle processes, procedures, methods and techniques
- Explain and determine key factors used in the SIS engineering and design such as random hardware failure, architectural constraints and systematic capability

Course duration

The duration is 4 days consisting of 3 days of tuition with an examination on the fourth day.

Participant profile

This training is targeted to control, instrumentation and application engineers who will be involved in executing SIS projects covering any phase of the safety lifecycle from hazard and risk assessment, through engineering and design to operations and maintenance.

Prerequisites for TÜV Rheinland FS Engineer certificate

In accordance with the TÜV Rheinland functional safety program, to be accredited students shall have:

- A minimum of 3 years experience in the field of functional safety
- University degree or equivalent engineering experience and responsibilities as certified by employer or engineering institution

Topics covered:

- TÜV Rheinland Functional Safety program
- Background on Functional Safety
- Regulations and Safety standards
- IEC 61508 and IEC 61511
- Management of Functional Safety
- Competency management
- Safety Lifecycle phases and planning
- Hazard and risk analysis
- Target SIL determination methods
- Safety requirement specification
- SIS design and development
- Probability calculation
- Selection of components, subsystems
- Proven in use
- Verification, validation, audit and assessment
- Operations, maintenance and modifications
- Continuous review and improvement

Course type and methods

This is an instructor led course with interactive classroom discussions and practical examples of implementation of safety systems.

How to order

Please contact ABB University as listed below for either attendance at any open course being planned in your region or if you would like to run a training course specific to your organisation. For on-site training, a fixed price training proposal will be issued to you for your approval to proceed.

ABB University

https://new.abb.com/service/abb-university ABB University Course Code - T142

Course outline
Day 1
Course overview
TÜV Rheinland functional safety program
Background on functional safety
Regulations and safety standards
Safety lifecycle
Day 2
Management of functional safety
HazId and SIL determination
Safety Requirement Specification (SRS)
SIS design and engineering
Day 3
SIS design and engineering
Verification and validation
Audit and assessment
Operation, maintenance and modification
Day 4
Examination





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