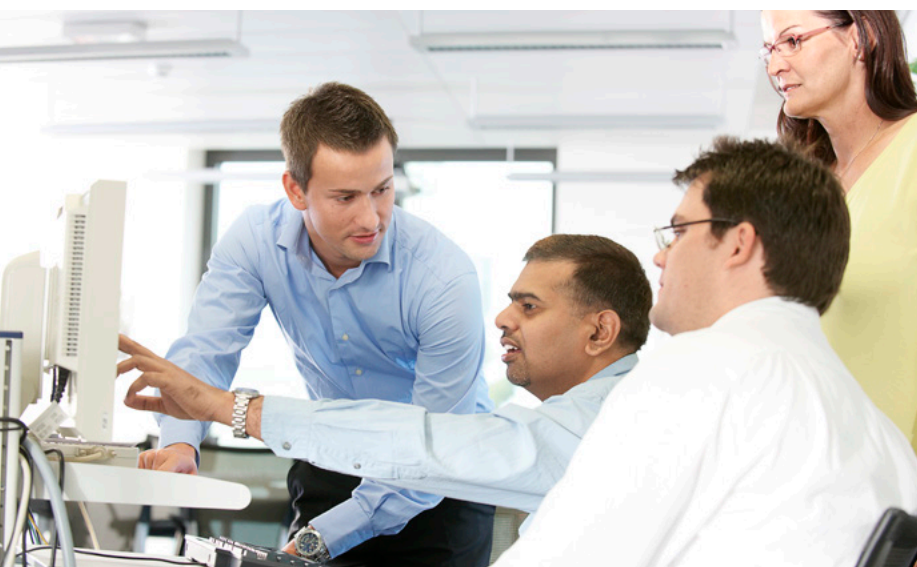


T142

Safety Instrumented Systems TÜV Functional Safety Engineer



Course type and methods

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

Student Profile

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

Prerequisites

In accordance with the TÜV Rheinland Functional Safety program, to be accredited students shall have:

- Minimum 3 yrs field experience in functional safety
- University degree or equivalent engineering experience and responsibilities as certified by employer or engineering institution.

Course objectives

Upon completion of this course the participants will be able to:

- Describe principles of Functional Safety Management & 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

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.

- Describe a Safety Requirement Specification
- 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
- Tell main differences between IEC61508 Editions 1&2

Main topics

- TÜV 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 - aspects
- Verification, validation, audit and assessment
- Operations, maintenance and modifications
- Continuous review and improvement

Duration

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

Course Outline

Day 1	Day 2	Day 3	Day 4
<ul style="list-style-type: none">• Course overview• TÜV Functional Safety program• Background on Functional Safety• Regulations and safety standards• Safety lifecycle	<ul style="list-style-type: none">• Management of Functional Safety• HazId and SIL determination• Safety Requirement Specification• SIS design and engineering	<ul style="list-style-type: none">• SIS design and engineering• Verification and validation• Continuing use and improvement• IEC 61508 Edition 2	<ul style="list-style-type: none">• Examination

To register, contact the North America Customer Service Center or visit us online ABB Inc.
+1 800 HELP 365 Option 2, Option 4
Fax: +1 919 666 1388
abbuniversity@us.abb.com

abb.us/abbuniversity

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB AG.
Copyright© 2017 ABB
All rights reserved