



**DURATION**  
1 day

**LEVEL**  
Foundation

**FORMAT**  
On-site classroom · virtual instructor-led

**LANGUAGE**  
English

**MAX. PARTICIPANTS**  
16

**16**  
lifecycle phases explained

**1**  
role-and-responsibility map

**1**  
gap check against your FSMS

## ◆ Overview

Most of the people who influence whether a SIS works — operators who bypass it, technicians who test it, engineers who change the set-point — have never read IEC 61511. This course explains the safety lifecycle from hazard analysis to decommissioning in plain language, what each phase produces, who is responsible, and how functional safety management, competence and assessment hold it together. It ends with a gap check against the site's own functional safety management system.

## ◆ Learning outcomes

- Describe the IEC 61508 and IEC 61511 lifecycle phases and their deliverables
- Explain SIL, PFDavg, demand mode and proof testing without the mathematics
- Identify the responsibilities of operations, maintenance, engineering and management in each phase
- Recognise how bypasses, MOC and proof-test deferrals affect achieved SIL
- Explain functional safety management, competence and assessment requirements
- Locate the gaps in a site's functional safety management system

## ◆ Who should attend

Engineers, supervisors and managers who touch a safety instrumented system without being SIS specialists: process, operations, maintenance, projects, HSE and asset integrity

## ◆ Course outline

### MORNING

Why functional safety standards exist · IEC 61508 and IEC 61511 relationship and scope · analysis phase: hazard and risk assessment, allocation, SRS · realisation phase: design, verification, installation and validation · SIL, PFD, demand mode and RRF explained

### AFTERNOON

Operation and maintenance phase: proof testing, bypasses, demand recording · modification and decommissioning · functional safety management, competence and assessment · what an FSA looks for · gap check against the site's FSMS and lifecycle records

## ◆ Standards referenced

IEC 61508-1 IEC 61511-1 ANSI/ISA-84.00.01

OSHA 29 CFR 1910.119

CCPS Guidelines for Safe and Reliable Instrumented Protective Systems

## ◆ Tools & exercises

Lifecycle records and SIF register illustrated in CeraPHA Studio; no software skills required

## ◆ What's included

- ✓ Course manual and slide pack
- ✓ Software access for the course
- ✓ Post-course Q&A with the instructor
- ✓ Exercise and case-study pack
- ✓ Competency quiz and certificate
- ✓ Templates used in the exercises

**PREREQUISITES**  
None

**CERTIFICATION**  
Certificate of completion; awareness-level evidence for functional safety competence records

**INSTRUCTORS**  
Practising engineers — TÜV HAZOP Leader, CCPSC and IEC 61511 Functional Safety certified — with 200+ years of cumulative plant experience.

**Book this course or build a custom curriculum**

On-site at your plant or virtual · in-house groups · competency assessment included

[sales@cerasus.ai](mailto:sales@cerasus.ai) · +974 5506 2743  
Cerasus Technologies QFZ LLC · Ras BuFontas Free Zone · Doha, Qatar