



Obtain Your Personal Certification in ISO 26262

**Functional safety training
for automotive professionals**

Course overview

This four-day course is designed for engineers, developers, and managers seeking to successfully apply ISO 26262 to their safety-related automotive electronics programs. The training starts with an overview of functional safety and the ISO 26262 framework for safe development of automotive electronics. Then the full 12-part ISO 26262 standard is described in detail, including all aspects of safety management, concept and system development, hardware, software, and supporting processes. Attendees will work on exercises designed to teach the key concepts of functional safety in automotive hardware, software, and systems. A wide range of specific technical examples are used to illustrate important points. This comprehensive course covers all requirements of ISO 26262:2018.

Training topics

- Overview and scope of ISO 26262:2018
- Management of functional safety
 - Tailoring of safety activities
 - Safety culture
 - Confirmation measures, audit, and assessment processes
- Concept phase
 - Hazard analysis and risk assessment (HARA)
 - Assigning safety goals and automotive safety integrity level (ASIL) ratings
 - Functional safety concept (FSC)
- System-level development
 - Technical safety concept (TSC)
 - System and item integration and testing
 - Safety validation
 - Hardware-software interface (HSI) specification
- Hardware development
 - Safety requirements and design
 - Hardware architectural metrics, including types of faults and diagnostic coverage
 - Hardware testing
- Software development
 - Safety requirements and design
 - Software architecture
 - Software unit and integration testing
 - Qualification of software components
- Production, operation, service, and decommissioning
 - Pre-production planning requirements
 - Manufacturing related functional safety topics
 - Service and user manual guidelines
- Supporting processes
 - Criteria for coexistence of elements
 - ASIL decomposition
 - Analysis of dependent failures
 - Confidence in software tools
 - Proven in use



Optional UL Certified Functional Safety Professional Exam

Participants who complete all four days of training are eligible to take a two-hour certification exam on the morning of the fifth day. Those who pass the exam are individually certified as a *UL Certified Functional Safety Professional (UL-CFSP)* in Automotive.



Upon the successful completion of the *UL-CFSP* exam, participants will receive a certificate and badge that they can use to demonstrate their competence in automotive functional safety. The certification is good for three years, after which individuals may recertify.

Objectives

Upon successful completion of this workshop, you will be able to:

- Understand the fundamentals of functional safety concepts, principles, standards and legal implications
- Establish and integrate functional safety management into the entire value chain
- Conduct hazard identification and risk assessment for automotive systems
- Determine safety goals and ASILs, including the application of ASIL decomposition in different phases of the development
- Perform qualitative and quantitative safety analysis techniques, such as fault tree analysis (FTA), failure mode and effects analysis (FMEA), and failure modes, effects, and diagnostic analysis (FMEDA) throughout the development process
- Evaluate quantitative hardware metrics including single point fault metric (SPFM), latent fault metric (LFM), and probabilistic metric for random hardware failures (PMHF)
- Define a software development process in accordance with required ASIL
- Develop test plans and specifications to verify and validate safety of automotive electronics
- Establish a safety case to facilitate functional safety assessment and certification

Target audience

- Engineers, developers, project leaders, quality managers and testing personnel who are developing embedded automotive systems based on ISO 26262
- Leaders of organizations involved in engineering development of automotive electronic systems, hardware, software, and processes
- Automotive industry professionals seeking a better understanding of functional safety of automotive electronic systems and the ISO 26262 standard
- Safety and quality professionals responsible for ISO 26262 compliance

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