

LAPT

LONDON ACADEMY OF PROFESSIONAL TRAINING

CERTIFICATE

ISO 26262SMV — Functional Safety for Road Vehicles

ISO Certification Programme



LAPT — London Academy of Professional Training

Address 85 Great Portland Street, W1W 7LT, London, United Kingdom

Email info@lapt.org

Telephone +44 7513 283044

Web lapt.org

Reference TR-SMV-26262SMV • ISO Transport

UKPRN 10067351 • Registered in England and Wales, company 4984798

AT A GLANCE

REFERENCE	TR-SMV-26262SMV
AWARD	Certificate
ASSESSMENT	430 marks — 258 to pass (60%)
PREREQUISITES	None
VALIDITY	Lifetime
AWARDING BODY	LAPT — London Academy of Professional Training

CURRICULUM

1 Case Studies and Applications 0 chapters65 marks	
2 Compliance and Standards 5 chapters · 12 classes65 marks	
• 1 Overview of ISO 26262: Key Concepts and Terminology — 6 classes › 1.1 Define Key Terminology in ISO 26262 › 1.2 Explain the Structure of ISO 26262 Standards › 1.3 Identify the Scope of ISO 26262 in Automotive Safety › 1.4 Discuss the Importance of Functional Safety in Road Vehicles › 1.5 Explore the Roles of Stakeholders in ISO 26262 Compliance › 1.6 Apply Key Concepts of ISO 26262 to Real-World Scenarios • 2 Understanding Compliance: Standards and Regulations in the Automotive Industry — 6 classes › 2.1 Identify Key Automotive Standards and Regulations › 2.2 Analyze the Role of ISO 26262 in Functional Safety › 2.3 Explore the Framework of Compliance in the Automotive Sector › 2.4 Evaluate the Impact of Non-Compliance on Vehicle Safety › 2.5 Apply Compliance Principles to Real-World Automotive Scenarios › 2.6 Develop Strategies for Ensuring Continuous Compliance • 3 Risk Management in Functional Safety: Methods and Processes	• 4 Safety Lifecycle: Implementation and Validation Strategies • 5 Organizational Structures for Functional Safety: Leadership and Culture

3

Functional Safety Principles

5 chapters · 30 classes **85 marks**

• 1 Foundations of Functional Safety in Automotive Systems — 6 classes

- › 1.1 Identify Key Concepts of Functional Safety in Automotive Systems
- › 1.2 Analyze ISO 26262 Standards and Their Importance
- › 1.3 Explore the Safety Lifecycle in Automotive Development
- › 1.4 Examine Hazard Analysis and Risk Assessment Techniques
- › 1.5 Evaluate the Role of Safety Concepts in System Design
- › 1.6 Apply Functional Safety Principles to Real-world Scenarios

• 2 Understanding ISO 26262 and Its Framework — 6 classes

- › 2.1 Define ISO 26262 and Its Importance in Functional Safety
- › 2.2 Identify Key Components of the ISO 26262 Framework
- › 2.3 Explore the Lifecycle Phases Defined by ISO 26262
- › 2.4 Examine Safety Concepts and Principles in ISO 26262
- › 2.5 Analyze Roles and Responsibilities in Implementing ISO 26262
- › 2.6 Apply ISO 26262 Guidelines to Real-World Scenarios

• 3 Hazard Analysis and Risk Assessment Techniques — 6 classes

- › 3.1 Define Hazards in Automotive Systems
- › 3.2 Identify Risk Factors Associated with Hazards
- › 3.3 Assess Risk Severity and Probability of Occurrence
- › 3.4 Classify Risks Using ISO 26262 Guidelines
- › 3.5 Develop Mitigation Strategies for Identified Risks
- › 3.6 Apply Hazard Analysis Techniques to Case Studies

• 4 Safety Requirements Derivation and Implementation — 6 classes

- › 4.1 Identify and Analyze Safety Requirements in Functional Safety
- › 4.2 Develop a Framework for Safety Requirements Derivation
- › 4.3 Assess System Risks to Inform Safety Requirements
- › 4.4 Implement Safety Requirements in the Design Process
- › 4.5 Validate Safety Requirements Through Testing and Review
- › 4.6 Monitor and Update Safety Requirements for Continuous Compliance

• 5 Verification, Validation, and Safety Planning — 6 classes

- › 5.1 Define Key Terms in Verification and Validation
- › 5.2 Distinguish Between Verification and Validation Processes
- › 5.3 Identify Methods for Effective Safety Planning
- › 5.4 Explore the Role of Testing in Functional Safety
- › 5.5 Analyze Case Studies on Verification and Validation Failures
- › 5.6 Develop a Safety Validation Plan for a Hypothetical Vehicle System

4

Leadership in Safety Engineering

0 chapters **65 marks**

5

Risk Management Techniques

5 chapters · 30 classes **85 marks**

• 1 Understanding Risk Management Principles in ISO 26262 — 6 classes

- › 1.1 Define Key Concepts of Risk in ISO 26262
- › 1.2 Identify the Stages of Risk Management Process
- › 1.3 Analyze Risk Assessment Techniques in Functional Safety
- › 1.4 Evaluate the Role of Hazard Analysis in Risk Management
- › 1.5 Implement Risk Mitigation Strategies within ISO 26262
- › 1.6 Develop a Risk Management Plan for Automotive Projects

• 2 Identifying Hazards and Assessing Risks in Smart Systems Vehicles — 6 classes

- › 2.1 Define Hazards in Smart Systems Vehicles
- › 2.2 Recognize Stakeholder Perspectives on Risks
- › 2.3 Utilize Risk Assessment Tools for Smart Systems
- › 2.4 Analyze Potential Failure Modes and Effects
- › 2.5 Develop Risk Mitigation Strategies
- › 2.6 Evaluate the Effectiveness of Risk Management Plans

• 3 Implementing Risk Mitigation Strategies in Functional Safety — 6 classes

- › 3.1 Identify Key Risks in Functional Safety Systems
- › 3.2 Analyze Risk Impact and Probability in Road Vehicle Contexts
- › 3.3 Evaluate Existing Mitigation Strategies for Effectiveness
- › 3.4 Develop New Mitigation Approaches Based on Risk Assessment
- › 3.5 Implementing Mitigation Strategies: Best Practices and Tools
- › 3.6 Monitor and Review Effectiveness of Risk Mitigation Strategies

• 4 Verification and Validation of Risk Management Approaches — 6 classes

- › 4.1 Identify Key Risk Management Approaches in Functional Safety
- › 4.2 Differentiate Between Verification and Validation Techniques
- › 4.3 Assess the Effectiveness of Risk Management Strategies
- › 4.4 Develop Verification Plans for Road Vehicle Safety
- › 4.5 Conduct Validation Tests for Risk Management Approaches
- › 4.6 Review Case Studies of Successful Risk Management Implementation

• 5 Leadership and Organizational Culture in Managing Functional Safety Risks — 6 classes

- › 5.1 Identify Key Leadership Roles in Functional Safety Management
- › 5.2 Develop an Understanding of Organizational Culture's Impact on Safety
- › 5.3 Assess Risk Management Techniques in Leadership Contexts
- › 5.4 Promote Safety-First Mindset Across Organizational Levels
- › 5.5 Implement Strategies for Effective Risk Communication
- › 5.6 Evaluate Leadership Effectiveness in Functional Safety Initiatives

6

Safety Lifecycle Management

0 chapters **65 marks**

