

Advanced Risk, Reliability & Safety Management Techniques

Professional training programme



SPARK TRAINING

Professional training courses for leaders, specialists, and organizations seeking practical capability development.

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— Workshop Overview

This Advanced Risk, Reliability & Safety Management Techniques training course examines advanced analytical techniques for risk, reliability and safety management. In doing so, we incorporate operational research methods and multiple criteria decision making and demonstrate their practical application to cases of major failures and disasters. The idea of the Advanced Risk, Reliability & Safety Management Techniques training course is to look at Learning from Failures. With the rapid acceleration of product technology, reliability engineering is an urgent technical and business issue that requires the expertise of well-educated, trained engineers and technology leaders. In this multidisciplinary training course, you'll learn to identify, manage, and eliminate product and system failures using advanced risk and reliability practices and data analysis techniques. This Advanced Risk, Reliability & Safety Management Techniques training course will cover state-of-the-art research in risk assessment and management, reliability engineering, decision analysis and safety management. This Advanced Risk, Reliability & Safety Management Techniques training course will feature: How do we learn from failures?

- An interdisciplinary approach, combining risk analysis, reliability engineering, decision analysis and management science
- Feedback from the users (maintenance) to design
- Application of advanced tools for safety and integrity

Why Attend

This course uses instructor-led sessions, guided discussion, and practical exercises built around Day one: Why there is a need for Advanced Risk, Reliability and Safety Management Techniques?, Day two: The Concept of Generic Lessons & Benchmarking, Day three: A Framework of Learning and Unlearning Excellence, and day

Who Should Attend

This Advanced Risk, Reliability & Safety Management Techniques training course is highly recommended for all Operations, Maintenance, Reliability, Engineering and Technical Support staff. Also, this course is applicable to any person actively involved or contemplating safety, performance measurement, improvement and/or

— Learning Objectives

- Explain the benefits of acquiring best practices from High Reliability Organizations (HROs)
- Show how activities play a part in helping their organization perform at a higher level
- Determine methods for generating and implementing effective performance metrics
- Analyze critically the methodologies employed in the organization & implement improvements
- Link theory with practice and exposes the delegates to the evolutionary trends in risk, safety and reliability analyses

- Learn how to serve on an investigation team of a disaster

— Course Outline

DAY 1

Day one: Why there is a need for Advanced Risk, Reliability and Safety Management Techniques?

- What is Risk, and Hazard?
- Advantages and Disadvantages of Risk Management
- Proactive vs Reactive Attitudes towards Risk
- Qualitative and Quantitative Risk Analysis
- What is Reliability Engineering
- Choice of Models and Existing Assumptions

DAY 2

Day two: The Concept of Generic Lessons & Benchmarking

- Attributes of the generic lessons
- Best practice of learning from failures from different industries
- Best practice can be learned from worst practice
- The ten generic lessons and the three underpinning factors
- What is benchmarking? History of benchmarking
- Different methods of benchmarking and how they relate to each other

DAY 3

Day three: A Framework of Learning and Unlearning Excellence

- Fault Tree Analysis (FTA) and Event Tree Analysis (ETA)
- Systems modelling using Reliability Block Diagrams
- Failure Mode and Effects Analysis (FMEA) / Failure Mode Effects and Criticality Analysis (FMECA)
- Hazard and Operability Study (HAZOP)
- A framework for analysing near-misses and failures
- High severity with low frequency versus high severity with high frequency

DAY 4

Day four: Other Frameworks / Models of Learning from Incidents

- Reliability, Availability, Maintainability (RAM)
- Risk control and decision support systems
- Failure consequences
- Introduction to stochastic modelling
- Attributes of Organisational Crises
- Inspection and Structural Health Monitoring (SHM)

DAY
5

Day five: Towards Achieving Organisational Excellence

- Design and Reliability of Control Systems
- Design and Reliability of Protective Systems
- Quantitative reliability analysis
- A framework for Benchmarking of Resilience
- Towards an Operational Excellence Award
- Group Projects and Presentations

— Upcoming Classroom Dates

DATE	LOCATION	FEE
12 - 16 October 2026	Amsterdam - Netherlands	€2,125
9 - 13 November 2026	Istanbul - Türkiye	€1,425
14 - 18 December 2026	Rome - Italy	€2,125
18 - 22 January 2027	Kuala Lumpur - Malaysia	€1,400
15 - 19 February 2027	Barcelona - Spain	€1,925
15 - 19 March 2027	London - United Kingdom	€2,100
19 - 23 April 2027	Geneva - Switzerland	€2,625
17 - 21 May 2027	Amsterdam - Netherlands	€2,125

— Certificate and Registration

Participants who attend and complete the full programme receive a SPARK Training Certificate of Completion. For registration, in-house delivery, or availability questions, contact info@sparktraining.eu or +31 85 115 0004.