BLACKBIRD FOR TRAINING

# Comprehensive Safety Technology & Risk Management

15 – 26 February 2027
Amsterdam (Netherlands)



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## Introduction

As technological systems become increasingly complex, identifying and controlling safety hazards becomes more challenging. Plant Managers and Engineers are increasingly aware that safety and risk management touch every aspect of the day-to-day operations of their plants and engineering systems. To comply with constantly evolving international and national environmental and economic standards, understanding safety and risk management has become essential.

Unsafe systems can lead to significant financial losses due to accidents, production disruptions, legal repercussions, market share loss, and degradation of both company assets and the environment. In this course, you will learn how to utilize advanced safety technology and risk assessment techniques to enhance the safety of systems and machinery while complying with industry standards.

## Course Objectives

- Apply the principles of hazard identification and risk assessment to processes and machinery.
- Understand the concept of reliability and use failure tracing methods.
- Demonstrate a practical understanding of quantitative risk assessment techniques and the data required for records.
- Advise management on the most effective control methods based on risk evaluations.
- Identify the general requirements for developing a safe system of work.
- Recognize relevant international safety standards related to reliability and machinery safety.
- Promote a proactive approach to hazard analysis and risk management.
- Understand how safety technology can integrate into existing systems to prevent accidents.

## Course Outlines

### Day 1: Introduction to Safety Engineering: Hazard Identification and Control

- Hazard Identification: Why safety engineering is crucial.
- Major disaster examples and how they can be prevented.
- The safety system process: identifying and controlling hazards using safety technology.



## Day 2: Risk Tolerability Criteria, Hazard Identification Techniques, and Designing Out Hazards

- Risk tolerability criteria and how to identify hazards using advanced safety technology.
- Hazard identification techniques for eliminating risks in engineering processes.

## Day 3: Safety Standards, Safety Analysis in Engineering, Chemical Processes, and Manufacturing

- Safety standards national and international and their application in engineering systems.
- Applying safety analysis to chemical processes and manufacturing systems using technology safety rules.

## Day 4: Risk Assessment Techniques, Safety Management, and Safety in the System Life Cycle

- Techniques for risk assessment and their role in safety management.
- The role of safety technology in the system life cycle and hazard management.
- Using integrated safety management tools to streamline safety processes.

## Day 5: Machinery and Work Equipment Safety, Machinery Hazard Identification, and Prevention Methods

- Machinery and work equipment safety: Identifying and preventing machinery-related hazards using industrial safety technologies.
- Examples of HAZOP and failure mode analysis for identifying and mitigating machinery accidents.

## Day 6: Human Factors Safety Analysis, Performance, and Human Error

- Human factors safety analysis and their impact on performance and human error.
- Applying technology safety rules to improve human performance and reduce safety-related errors.

## Day 7: Reliability Technology, Types and Causes of Failures, Methods of Preventing Failures

- Reliability technology: Understanding failure types and causes.
- Methods for preventing failures using advanced safety technology and reliable system designs.

## Day 8: Reliability of Components and Systems, Control Systems, and Safety Integrity Levels SIL

- Assessing the reliability of components and systems.
- Designing control systems with high reliability, and understanding Safety Integrity Levels SIL selection.



### Day 9: Consequences Analysis, Mechanics of Fire, Explosion, and Toxic Releases

- Performing consequences analysis for fire, explosion, and toxic releases.
- Utilizing dispersion modeling software to predict and manage these hazards.

### Day 10: Quantification of Risk, Event Tree Analysis ETA

- Understanding risk quantification and the use of Event Tree Analysis ETA to evaluate safety hazards.

## Why Attend this Course: Wins & Losses!

- Learn how to use advanced safety technology to improve the safety of systems and machinery.
- Improve your skills in risk assessment and safety management using cutting-edge techniques.
- Gain a solid understanding of reliability technology and its application in machinery safety.
- Learn how to integrate safety technologies into existing systems to prevent accidents and ensure compliance with safety standards.
- Develop the skills to advise management on risk control methods and safety solutions.

## Conclusion

The "Safety Engineering and Risk Management" course is essential for professionals aiming to enhance their skills in safety analysis and risk management. By attending, you will be able to utilize advanced safety technologies, perform comprehensive risk analysis, and apply best practices in industrial safety technologies. This course equips you with the tools to proactively manage safety risks, making it an indispensable opportunity for anyone involved in safety management and engineering.

**Don’t miss the chance to advance your career while improving the safety of your operations.**

