MERCURY

Advanced Process Risk Assessment, Risk Management, and Compliance Course

7 – 11 December 2026
Brussels (Belgium)



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Ref: 6008_285763 **Date:** 7 – 11 December 2026 **Location:** Brussels (Belgium) **Fees:** 5600 Euro

Introduction

Health, Safety, and Environmental Management Systems are based on a proactive process for incident prevention as well as reactive monitoring of performance. Risk assessment is required to be applied to all activities that impact health and safety, production, assets, environment, and the company's reputation.

This comprehensive advanced process risk assessment and management course provides participants with the knowledge required to perform advanced process risk assessments and apply adequate risk management strategies within their organization.

The advanced process risk assessment and management course emphasizes a systematic approach to identifying, evaluating, and managing risks associated with industrial processes. It leverages an array of advanced techniques and methodologies that are crucial for maintaining health, safety, and environmental standards and preserving the company's reputation.

Upon successful completion of this course, participants will be eligible for an advanced risk management certification, acknowledging the expertise gained in what a risk assessment process is, advanced risk assessment, and risk management.

What is Risk Management Assessment?

Risk management assessment is a critical component of any comprehensive safety and risk management strategy. It involves identifying potential risks, analyzing their impact, and determining the best ways to mitigate or manage those risks. This course will help participants understand the foundational principles of risk management assessment and apply them to real-world industrial scenarios.

Risk Assessment Training for Managers

This course is particularly beneficial as a risk assessment training for managers who are tasked with overseeing risk assessment and management processes. Understanding both the theoretical and practical aspects of risk assessment and management is essential for effective leadership in health and safety management systems.

Health and safety are paramount in the risk assessment and management process. This course includes a dedicated focus on health and safety risk assessments, ensuring that participants are adept in preserving the well-being of all stakeholders and complying with regulatory requirements.

This advanced process risk assessment and management course is for individuals or organizations interested in enhancing their knowledge and capabilities in risk assessment and risk management.

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Targeted Groups

- Management and those with responsibilities for analyzing risks and incidents.
- Production, project, process, mechanical, control, maintenance, and HSE Personnel.
- All personnel involved in implementing the Company's HSE Management System.

Course Objectives

At the end of this advanced process risk assessment and management course, the participants will be able to:

- Recognize the difference between hazard, risk, and risk assessment.
- Learn how to evaluate different types of risk.
- Develop the skills of applying advanced risk assessment techniques relevant to the process industry.
- Develop a strategy for planning and implementing risk reduction action plans.
- Appreciate the contribution of human error to accidents.
- Apply advanced techniques for root-cause analysis for incidents.

Targeted Competencies

- Improving the practical skills in applying advanced risk assessment techniques relevant to the process industry.
- Effectively balance risk against cost to optimize risk reduction measures.
- Motivating your people for an improved safety culture.
- Appreciating the role of Quantified Risk Assessment and significant hazards.
- Applying root-cause analysis to incident investigation and analysis.

Course Content

Unit 1: Advanced Risk Assessment Techniques: HAZOP

- Introduction to hazard identification and analysis techniques.
- Techniques for hazard identification and analysis- HAZOP.
- Syndicate exercise- application of HAZOP to batch and continuous processes.
- Integrating HAZOP within the risk management system.
- Review of commercial HAZOP software.

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Unit 2: The Role of Quantified Risk Assessment 'QRA'

- Failure Modes and Effects Analysis FMEA.
- Decision trees and Event Tree Analysis ETA.
- Sources of failure data.
- Fault Tree Analysis FTA.
- Quantification of ETA and FTA.
- Evaluation of individual and societal risks.

Unit 3: Mechanics of Fire, Explosion, and Toxic Releases

- The role of consequence analysis in QRA.
- Types of Fires: Jet flame, pool fire, flash fire, BLEVE.
- Types of explosion: VCE, UVCE, pressure burst, dust explosion.
- Vulnerability analysis.
- Commercial software for modeling releases, fire, explosion, and toxic releases.

Unit 4: Advanced Incidents Investigation Techniques

- Human contribution to accidents.
- The role of root cause analysis in identifying management system failures.
- Accident investigation techniques.
- Latent failure and root causes for incidents.
- Techniques for root-cause analysis.

Unit 5: Promoting a Positive Safety Culture

- Introduction to safety culture.
- Techniques for improving safety culture.
- Measuring improvements in safety culture.
- Integrating safety culture within the HSE management system.