



Safety Technology & Risk Management Training Course

11 – 15 January 2027
Cape Town (South Africa)



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Introduction

As technological systems become more complicated, identifying safety hazards and controlling their impact becomes increasingly difficult. Plant Managers and Engineers are becoming more aware that safety and risk management are integral aspects of the day-to-day running of their plants, engineering, and process systems to comply with ever-changing and demanding international, national, and economic values and standards.

Unsafe systems can result in financial losses due to accidents, disruption to production, criminal and civil prosecutions, loss of market share, and the degradation of company assets and the environment.

Enroll in our cutting-edge advanced safety technology and risk management training course to delve deep into safety and security technologies. Gain expertise in advanced safety technology applications, including safety control and health and safety technology.

This comprehensive advanced safety technology and risk management program covers all safety and risk management aspects, providing invaluable insights into mitigating potential hazards and ensuring a secure environment.

Elevate your safety risk management training skills and emerge as a proficient professional equipped to navigate complex safety challenges. In the safety technology and risk management course, participants will explore the latest innovations and best practices in safety and security technology, effectively enhancing their capabilities to safeguard lives and assets.

Advanced Safety Technology in Industry

Incorporating advanced safety technology is essential for modern industrial operations. This safety technology and risk management course segment will cover implementing cutting-edge safety control technology, health and safety technology solutions, and integrating safety and security technology into existing systems to enhance operational reliability and mitigate risks.

Targeted Groups

- Operations and Process Professionals.
- Reliability and Safety Professionals.
- This safety technology and risk management course is for professionals involved in process improvement.

Course Objectives

By the end of this safety technology and risk management course, participants will be able to:

- Apply the principles of hazard identification and assessment of risk 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 the evaluation of risk
- Identify general requirements for the development of a safe system of work
- Recognize relevant international standards for reliability and machinery safety
- Promote a proactive attitude within the individual to hazard analysis

Targeted Competencies

Upon the end of this safety technology and risk management course, target competencies will be able to:

- Understanding of safety, risk, and continuity of operations.
- Development of people management skills.
- Master techniques that can enhance plant reliability.
- Conducting benchmarking and quality systems auditing.
- Applying decision analysis approaches.

Course Content

Unit 1: Hazard Identification

- Why do we need safety engineering?
- Examples of major disasters.
- The safety system process.
- Hazard identification.
- Hazard control.
- Criteria for risk tolerability.
- Hazard identification techniques.
- Design out hazards.
- Safety standards codes, national and international.
- The safety analysis in engineering.
- The safety analysis in a chemical process.
- Understand safety analysis in manufacturing.

Unit 2: Risk Assessment Techniques

- Safety management.
- Safety in the system life cycle.
- Hazard identification checklist.
- Process, workplace, and work equipment risk assessment.
- Task-based risk assessment.
- Introduction to HAZOP.

Unit 3: Machinery and Work Equipment Safety

- Machinery hazard identification.
- Causes and methods for machinery accident prevention.
- HAZOP examples.
- Failure modes, human factors, and software safety.
- Conducting a failure mode and effects analysis.
- Human factors safety analysis.
- Performance and human error.
- Human factors and safety analysis.

Unit 4: Reliability Technology

- Types and causes of failures.
- Methods of preventing failure.
- Types of maintenance and inspection regimes.
- Reliability of components and systems.
- Design and reliability of control systems.
- Design and reliability of protective systems.
- The concept of HIPS High Integrity Protective Systems.
- Safety Integrity Levels SIL selection.

Unit 5: Consequences Analysis

- Mechanics of fire, explosion, and toxic releases.
- Dispersion modeling software.
- Types of fire: flash, jet, cascading fires, and BLEVE Boiling Liquid Expanding Vapor Explosion.
- Types of explosion.
- Quantification of risk.
- Event Tree Analysis ETA.