



Health, Safety and Environment

Advanced Process Risk Assessment & Risk Management

Course Introduction

Risk Management

Industrial disasters can occur through combination of small failures, culminating in a major incident. All too often the small failures and defects go unnoticed until disaster strikes. These routes to failure can be predicted and avoided. Health, Safety and Environmental Management Systems are based on a proactive approach aimed at the prevention of incidents as well as reactive monitoring of performance (including failures). Advanced Process Risk Assessment is required for all activities that impact on health & safety, production, asset, environment and the company reputation.

Target Audience

- Health and Safety Officers
- Environmental Health and Safety professionals
- Health and Safety Managers

Learning Objectives

- Recognise the difference between hazard, risk and risk assessment
- Learn how to evaluate different types of risk
- Understand Control Measures and Mitigation Measures
- 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
- Be able to understand the root causes of major incidents

Course Outline

• DAY 01

Advanced Risk Analysis

- Introduction
- Some Major Industrial incidents to learn from
- Principles of Risk Analysis
- The ISO 31000 International Risk Management Standard
- Consideration of the Risk Analysis Framework
- Risk Evaluation Process and Risk Assessment Techniques
- Personal Safety and Process Safety
- An introduction to the concepts of Layers of Protection (LOPs)
- Process Safety: Control Measures and Mitigation
- Risk Assessment Tool: BowTie Diagrams as an Advances Risk Assessment Tool

• Day 02

Advanced Incident Analysis

- Accident / Incident Causation
- Active Failures and Latent Conditions
- Barriers
- LOPA
- Review of the BowTie Diagram
- Investigating Accidents and Incidents
- Incident Occurrences; Eye Witness Testimonies; Analysis Team
- Gathering Evidence; Expert Support; Incident Sequence
- Preliminary Causes; Root Cause Analysis; Human Factors
- Risk Control Recommendations; Analysis Report
- Review the Barriers

• Day 03

Environmental Risks and the Human Factors in Accident Causation

- Overview of Environmental Hazards, Risks and Risk Management
- Barriers and Environmental Risks

- Brief overview of Human Factors in Incident Causation
- Sensory and Perceptual Processes
- Individuals – Psychology and Differences
- Perception and Decision Making
- Human factors, including errors and violations
- Improving Human Reliability: reducing the likelihood of errors and violations

• Day 04

Fires, Explosions and Toxic Releases

- Types of Fires (including pool fires, jet fires, etc)
- Fault tree analysis
- Explosions (LEL, UEL, and dust explosions)
- Pressure Explosion
- The DSEAR Risk Assessment
- Toxic Releases
- Incident Re-occurrence – Organisations Have No Memory

• Day 05

Health and Safety Culture

- Hazard Report and Near Miss Reporting
- What are the barriers to these?
- Introduction to Safety Culture
- Techniques for improving safety culture
- The role of the HSE Management System

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
May 12, 2025	May 16, 2025	5 days	4950.00 \$	England - London
Aug. 11, 2025	Aug. 15, 2025	5 days	4250.00 \$	UAE - Abu Dhabi

FROM	TO	DURATION	FEES	LOCATION
Nov. 9, 2025	Nov. 13, 2025	5 days	4250.00 \$	KSA - Riyadh
Nov. 23, 2025	Nov. 27, 2025	5 days	2150.00 \$	Virtual - Online