



Quality Management & Operational Excellence



Health, Safety and Environment

Process Hazard and Risk Analysis

Course Introduction

The **Process Hazard and Risk Analysis** course provides a comprehensive understanding of the principles and techniques used to identify and assess process hazards and risks in industrial settings. Delivered by BOOST, this course focuses on the identification of potential hazards, risk evaluation, and the implementation of control measures to ensure the safety and reliability of industrial processes.

Throughout this course, participants will explore various hazard and risk analysis methodologies, including HAZOP (Hazard and Operability Study), FMEA (Failure Modes and Effects Analysis), and Fault Tree Analysis. The course emphasizes a practical, hands-on approach to conducting hazard analyses and understanding the role of risk assessment in process safety management.

By the end of the course, participants will be equipped with the knowledge and skills necessary to identify, assess, and mitigate process risks, ensuring a safe and compliant work environment.

Target Audience

- Process safety managers and engineers
- Risk management professionals
- Health and safety officers
- Engineers involved in hazard analysis and risk assessment
- Safety coordinators and compliance officers in industries such as oil & gas, chemical, and manufacturing

Learning Objectives

1. Understand the key concepts of process hazards and risk analysis.
2. Apply different hazard identification and risk assessment techniques.
3. Conduct process hazard analyses such as HAZOP, FMEA, and Fault Tree Analysis.
4. Assess the risk associated with different processes and identify potential safety improvements.
5. Understand and apply risk management strategies to mitigate potential hazards.
6. Comply with relevant safety standards and regulations in process hazard analysis.
7. Develop effective action plans based on the results of hazard and risk assessments.

Course Outline

• 01 DAY ONE

Introduction to Process Hazard and Risk Analysis

- Overview of process hazard and risk analysis
- Understanding the importance of hazard identification and risk assessment in process safety
- Key concepts: Hazard, risk, and safety in industrial processes
- Regulatory standards and industry guidelines for process hazard analysis (PHA)
- Introduction to common hazard analysis methods: HAZOP, FMEA, Fault Tree Analysis

• 02 DAY TWO

HAZOP (Hazard and Operability Study) Methodology

- In-depth understanding of the HAZOP methodology
- Steps involved in conducting a HAZOP analysis
- Identifying process deviations and potential hazards using HAZOP
- Risk evaluation and determining the severity of consequences
- Documenting findings and developing corrective actions

• 03 DAY THREE

Failure Modes and Effects Analysis (FMEA)

- Introduction to FMEA: Purpose and application
- Identifying potential failure modes and their effects on system performance
- Risk priority number (RPN) calculation and prioritization of failure modes
- Determining the likelihood, impact, and detectability of risks

Developing mitigation strategies for high-priority failure modes

• 04 DAY FOUR

Fault Tree Analysis (FTA) and Other Risk Assessment Techniques

- Overview of Fault Tree Analysis (FTA) and its use in risk assessment
- Constructing fault trees and analyzing the probability of failures
- Other risk assessment techniques: Event Tree Analysis (ETA), Layers of Protection Analysis (LOPA)
- Comparing and contrasting different risk analysis methodologies
- Using software tools for risk analysis and documentation

• 05 DAY FIVE

Mitigation Strategies, Reporting, and Continuous Improvement

- Developing and implementing mitigation strategies based on hazard and risk analysis
- Best practices for reporting findings and recommending corrective actions
- Integrating risk assessment into continuous process improvement efforts
- Understanding the role of safety culture in process hazard analysis

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
May 4, 2025	May 8, 2025	5 days	4250.00 \$	Qatar - El Doha
Aug. 18, 2025	Aug. 22, 2025	5 days	4250.00 \$	UAE - Dubai

FROM	TO	DURATION	FEEs	LOCATION
Sept. 21, 2025	Sept. 25, 2025	5 days	2150.00 \$	Virtual - Online
Nov. 17, 2025	Nov. 21, 2025	5 days	4950.00 \$	Indonsia - Jakarta