



Health, Safety and Environment

## Process Safety in Oil and Gas Industry

# Course Introduction

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## Process Safety in Oil and Gas Industry

The Process Safety in the Oil and Gas Industry course is designed to provide engineers, managers, and safety professionals with a comprehensive understanding of process safety management principles specific to the oil and gas sector. Participants will learn how to effectively integrate process safety practices into the organization's overall management system, promote a culture of safety, and ensure compliance with industry standards and regulations.

The course emphasizes the critical role of process safety in preventing major accidents, managing operational risks, and achieving continuous improvement.

## Target Audience

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- Engineers, managers, and supervisors responsible for process safety management in the oil and gas industry.
- Safety professionals seeking to enhance their process safety knowledge and skills.
- Individuals aspiring to specialize in process safety within the oil and gas sector.
- Professionals involved in risk assessment, hazard analysis, and emergency response planning.

## Learning Objectives

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- Gain a deep understanding of process safety principles and practices specific to the oil and gas industry.
- Develop proficiency in risk assessment and hazard analysis techniques.

- Learn to ensure regulatory compliance and effectively manage process safety information.
- Master techniques for conducting thorough incident investigations and root cause analyses.
- Enhance leadership skills for promoting a safety-conscious culture within process operations.
- Acquire knowledge and strategies for emergency response planning and management.
- Develop expertise in process hazard analysis (PHA) methodologies such as HAZOP and LOPA.
- Understand the importance of safety integrity levels (SIL) and layers of protection analysis (LOPA).
- Familiarize with industry standards such as API, OSHA PSM, and IEC 61511.

## Course Outline

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- **DAY 01**

- **Module 1: Introduction to Process Safety**

- Welcome and Course Overview
    - Introduction to Process Safety

- **Day 02**

- **Module 2: Regulatory Framework and Standards**

- Overview of Major Regulations (OSHA PSM, EPA RMP)
    - Industry Standards (API, IEC 61511)
    - Compliance and Its Significance

- **Day 03**

- **Module 3: Process Safety Information (PSI)**

- Critical Process Safety Information Requirements

- Documentation and Management of PSI

#### **Module 4: Hazard Identification and Risk Assessment**

- Hazard Identification Techniques (HAZOP, What-If Analysis, FMEA)
- Risk Assessment Fundamentals (Qualitative vs. Quantitative Risk Assessments, Risk Matrix)

#### **• Day 04**

#### **Module 5: Risk Management and Safety Integrity Levels (SIL)**

- Layers of Protection Analysis (LOPA)
- Safety Integrity Levels (SIL)
- Risk Reduction Strategies and Inherently Safer Design Principles

#### **Module 6: Management of Change (MOC) and Incident Investigation**

- Importance of MOC in Process Safety
- Procedures for Implementing and Managing Changes
- Incident Investigation Techniques and Root Cause Analysis

#### **• Day 05**

#### **Module 7: Emergency Response and Safety Culture**

- Emergency Response Planning and Crisis Management
- Emergency Response Simulation
- Safety Leadership and Culture
- Human Factors in Process Safety

#### **Module 8: Continuous Improvement and Future Trends**

- Process Safety Performance Indicators
- Auditing and Review Processes
- Technology and Innovation in Process Safety
- Sustainable Practices and Environmental Considerations
- Final Project and Group Presentation

## Confirmed Sessions

| FROM           | TO             | DURATION | FEES       | LOCATION    |
|----------------|----------------|----------|------------|-------------|
| June 23, 2025  | June 27, 2025  | 5 days   | 4250.00 \$ | UAE - Dubai |
| Sept. 22, 2025 | Sept. 26, 2025 | 5 days   | 4250.00 \$ | UAE - Dubai |
| Dec. 22, 2025  | Dec. 26, 2025  | 5 days   | 4250.00 \$ | UAE - Dubai |