



Oil, Gas and Chemical

Chemical Process Safety in Upstream Oil & Gas

Course Introduction

The Chemical Process Safety in Upstream Oil & Gas course is designed to equip professionals with comprehensive knowledge and practical skills in managing process safety. Over five days, participants will explore the fundamentals of process safety, regulatory standards, and best practices essential for the oil and gas industry. The course delves into advanced techniques for hazard identification, risk assessment, and implementation of safety systems, including the use of Process Safety Information (PSI) and Safety Instrumented Systems (SIS). Attendees will also learn about operational safety practices, the importance of human factors, and emergency response planning. Through a blend of theoretical insights and practical applications, this training aims to enhance participants' ability to manage and mitigate risks, ensuring safer and more efficient operations in the upstream oil and gas sector.

Target Audience

This course is designed for professionals in the upstream oil and gas industry, including safety managers, engineers, operations personnel, and others responsible for ensuring process safety and regulatory compliance.

Learning Objectives

- Learn the key principles and importance of chemical process safety in the upstream oil and gas industry.
- Gain knowledge of relevant regulations, standards, and industry best practices for ensuring compliance and enhancing safety.
- Develop skills in various methodologies for identifying hazards and assessing risks effectively.

- Understand how to gather, maintain, and use process safety information and systems, including safety instrumented systems (SIS) and process hazard analysis (PHA).
- Explore strategies for improving operational safety, integrating human factors, and preparing effective emergency response plans.

Course Outline

• 01 Day One

Introduction to Process Safety and Regulatory Framework

- Introduction to Chemical Process Safety
- Definition and importance of process safety in upstream oil and gas
- Key principles of process safety management (PSM)
- Historical incidents and lessons learned
- Regulatory Framework and Standards
- Overview of relevant regulations and standards (OSHA, EPA, API, etc.)
- Understanding compliance requirements
- The role of industry best practices
- Hazard Identification and Risk Assessment
- Techniques for hazard identification (HAZID, HAZOP, FMEA)
- Risk assessment methodologies
- Developing risk matrices and prioritization

• 02 Day Two

Process Safety Systems and Risk Management

- Process Safety Information (PSI)
- Gathering and maintaining critical process safety information
- Documentation requirements and best practices
- Role of PSI in risk management
- Process Hazard Analysis (PHA)
- Conducting PHAs and understanding their importance

- PHA methodologies and tools
- Integrating PHAs into the overall safety management system
- Safety Instrumented Systems (SIS)
- Overview of SIS and their role in process safety
- Design and implementation of SIS
- Maintenance and testing of safety systems

• 03 Day Three

Operational Safety and Human Factors

- Operational Safety Practices
- Safe work practices and procedures
- Permit to work systems
- Lockout/tagout (LOTO) procedures
- Human Factors in Process Safety
- Understanding human error and its impact on safety
- Designing for human factors
- Training and competency management
- Emergency Response Planning
- Developing and implementing emergency response plans
- Incident command systems and roles
- Conducting drills and exercises for preparedness

• 04 Day Four

Process Safety Management (PSM) Implementation

- Elements of PSM Programs
- Overview of OSHA PSM elements
- Developing and implementing PSM programs
- Continuous improvement and auditing of PSM systems
- Mechanical Integrity
- Importance of mechanical integrity in process safety
- Inspection and maintenance programs
- Managing aging infrastructure and equipment
- Management of Change (MOC)
- Principles of MOC
- Implementing effective MOC procedures
- Documenting and communicating changes

• 05 Day Five

Advanced Process Safety Topics

- Inherently safer design principles
- Use of technology and innovation in process safety
- Advanced risk assessment techniques
- Future Trends in Process Safety
- Emerging challenges and opportunities in process safety
- The role of digitalization and data analytics
- Sustainability and process safety integration

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
April 14, 2025	April 18, 2025	5 days	4250.00 \$	UAE - Dubai
Sept. 15, 2025	Sept. 19, 2025	5 days	4950.00 \$	Singapore - Singapore
Dec. 29, 2025	Jan. 2, 2026	5 days	4250.00 \$	UAE - Abu Dhabi
Jan. 5, 2025	Jan. 9, 2025	5 days	4250.00 \$	KSA - Riyadh
Dec. 30, 2024	Jan. 3, 2025	5 days	4250.00 \$	UAE - Dubai