

ADVANCED PROCESS HAZARD & OPERABILITY STUDY (HAZOP)

"Strengthening Operational Safety and Risk Assessment through Expert-Level HAZOP Techniques"

Schedule

Date	Venue	Fees
02 - 04 Jun 2026	Manama, Bahrain	USD 2495 per delegate
14 - 16 Jul 2026	Doha, Qatar	USD 2495 per delegate
15 - 17 Sep 2026	Doha, Qatar	USD 2495 per delegate

► Available delivery methods: Face-to-Face & Online Training

Introduction

In high-risk industries, the ability to identify and mitigate hazards before they lead to incidents is vital. The HAZOP (Hazard and Operability) Study is a globally recognized and systematic technique used to analyze process risks and ensure operational integrity. This advanced-level training goes beyond HAZOP basics and focuses on practical application, critical thinking, and leadership in conducting HAZOP reviews in complex industrial settings.

Participants will gain hands-on experience in leading multidisciplinary HAZOP teams, utilizing guide words effectively, and generating actionable recommendations. Through real-world case studies, industry tools, and collaborative workshops, delegates will enhance their competence in ensuring safety, compliance, and operational excellence.

Objectives

By the end of this course, participants will be able to:

- Understand the principles and methodology behind advanced HAZOP studies
- Effectively plan, lead, and document HAZOP workshops
- Identify process hazards, operational issues, and human factors through structured analysis
- Apply guide words and deviation analysis in practical scenarios
- Evaluate safeguards and recommend risk-reduction actions
- Integrate HAZOP findings into broader process safety management systems

Why Attend

- Deepen your technical and analytical knowledge of HAZOP techniques
- Gain the capability to lead and facilitate high-level HAZOP sessions
- Increase organizational safety and operational reliability
- Learn from real-world failures and success stories across industries
- Access templates, checklists, and proven facilitation tools for immediate application

Target Audience

This program is designed for:

- Process engineers, safety engineers, and design engineers involved in hazard studies
- HSE professionals responsible for operational risk assessments
- Project managers and operations supervisors overseeing plant design or modifications
- Compliance and risk management personnel
- Anyone involved in facilitating, documenting, or participating in HAZOP teams

Individual Benefits

Key competencies that will be developed include:

- Hazard identification and risk analysis using the HAZOP technique
- Leadership in team-based risk studies
- Analytical thinking and structured problem-solving
- Communication and documentation of technical findings
- Integration of HAZOP results into risk management systems

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Ability to plan, facilitate, and lead HAZOP workshops
- Strong understanding of guide word application and deviation analysis
- Competency in documenting outcomes and managing recommendations
- Awareness of industry standards and regulatory expectations for hazard studies
- Skill in evaluating protective systems and safety instrumented functions (SIFs)

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings - In-depth exploration of HAZOP principles, roles, and lifecycle phases
- Case Studies - Lessons from real-world incidents, failures, and successful HAZOP implementations
- Workshops - Group-based HAZOP simulations and analysis of process deviations
- Peer Exchange - Team-based discussion of challenges in leading HAZOP sessions
- Tools - Access to HAZOP templates, checklists, and risk rating matrices

Course Outline

Training Hours: 7:30 AM – 3:30 PM **Daily Format:** 3-4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Foundations of Advanced HAZOP and Team Leadership

- Module 1: HAZOP Fundamentals and Process Safety Context (07:30 – 09:30) ● The role of HAZOP in process safety and risk management systems ● Review of HAZOP methodology and basic concepts ● Understanding the link between HAZOP and other hazard identification techniques
- Module 2: Planning and Preparing for HAZOP Studies (09:45 – 11:15) ● Defining HAZOP scope, nodes, and objectives ● Selecting multidisciplinary teams and defining roles ● Preparing P&IDs, process descriptions, and support data
- Module 3: Guide Words and Deviation Analysis (11:30 – 01:00) ● Applying guide words effectively in various process settings ● Identifying credible deviations and causes ● Structuring node-by-node analysis
- Module 4: Workshop – Simulated HAZOP Kick-off (02:00 – 03:30) ● Interactive session on initiating a HAZOP study ● Team setup, objective alignment, and preliminary node selection

Day 2: Facilitation, Evaluation, and Documentation

- Module 1: HAZOP Facilitation Skills and Tools (07:30 – 09:30) ● Leading structured HAZOP sessions with discipline and neutrality ● Managing group dynamics and ensuring effective participation ● Utilizing software tools and checklists
- Module 2: Identifying Consequences and Safeguards (09:45 – 11:15) ● Determining consequences of deviations ● Evaluating existing safeguards and identifying gaps ● Linking findings to Layers of Protection Analysis (LOPA)
- Module 3: Recording Recommendations and Assigning Actions (11:30 – 01:00) ● Documenting findings and rationales ● Assigning and tracking corrective actions ● Ensuring traceability and audit readiness
- Module 4: Workshop – Live Facilitation Simulation (02:00 – 03:30) ● Running a mock HAZOP session on a selected process unit ● Practice facilitation, documentation, and deviation walkthrough

Day 3: HAZOP Integration, Compliance, and Course Wrap-Up

- Module 1: Integrating HAZOP into Lifecycle and MOC Processes (07:30 – 09:30) ● Aligning HAZOP outputs with project design and plant modifications ● Ensuring HAZOP consistency in capital projects and revamps ● Role of HAZOP in Management of Change (MOC) systems
- Module 2: Regulatory and Industry Expectations (09:45 – 11:15) ● Global and regional HAZOP standards (e.g., OSHA PSM, IEC 61882) ● Auditor expectations and documentation requirements ● Incorporating human factors and operational feedback
- Module 3: Lessons Learned and Best Practices (11:30 – 01:00) ● Common HAZOP pitfalls and how to avoid them ● Success factors in effective HAZOP facilitation ● Case study reviews and practical takeaways
- Module 4: Action Planning and Q&A (02:00 – 03:30) ● Developing personal and organizational improvement plans ● Open forum for clarification and experience sharing ● Final knowledge review and certificate distribution

Certification

Participants will receive a Certificate of Completion in Advanced Process Hazard & Operability Study (HAZOP), demonstrating their advanced skills in hazard identification, risk analysis, and HAZOP facilitation in line with international best practices.

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