JUPITER PRIME

Consulting • Training • Advisory

جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

Advanced Process HAZOP Study Leadership Training Course

16 – 27 May 2027
Muscat

jupiterprime.uk

info@jupiterprime.uk

Registered in the United Kingdom and Saudi Arabia

Advanced Process HAZOP Study Leadership Training Course

Ref: 289_9554 **Date:** 16 – 27 May 2027 **Location:** Muscat **Fees:** 9900 GBP

Process HAZOP Study Leadership is the subject of this 2-week advanced training course for process engineers, HAZOP leaders, scribes and process safety engineers, who leave with a HAZOP study pack holding terms of reference, a node register, worksheets and a close-out tracker. Plant modifications, ageing facilities and tighter insurer and corporate scrutiny make the quality of hazard and operability studies a direct test of process safety. Jupiter Prime Training delivers this course for study leaders.

Why Process HAZOP Study Leadership Matters Now

Three groups shape HAZOP practice today: owners extending the life of ageing plants through modifications, project teams compressing design schedules, and insurers and corporate assurance functions that read study records closely after any loss. A well-led study finds credible deviations early and produces recommendations that actually change the design or the operating envelope; a poorly led one fills worksheets with generic safeguards and leaves risk unaddressed. The course rests on IEC 61882 Hazard and Operability Studies Application Guide and links each study to layer of protection analysis LOPA for scenarios that need a quantified decision.

Who Gains Most from Process HAZOP Study Leadership

- Engineers who chair hazard and operability sessions and decide when a deviation has been explored enough
- Scribes who record causes, consequences, safeguards and actions so that the worksheet stands up to audit
- Process safety engineers who set study scope, risk matrices and the link to protection layer assessment
- Design and operations engineers who bring P&ID, control and procedure knowledge into the session
- Engineers who own recommendation close-out and must show how each action reduced the scenario risk

The greatest gain comes when a study leader, a scribe and the process safety engineer from the same facility attend together, because they can agree a single study method before their next session.

Process HAZOP Study Leadership Capabilities

Participants move from knowing the HAZOP method to steering a multidisciplinary team through P&IDs and defending the record afterwards.

- Specify a study scope, node breakdown and design intent for each node — study sponsor and project schedule
- Apply guidewords and parameters to generate credible deviations — completeness of the hazard record
- Weigh existing safeguards for independence and effectiveness — decisions on further risk reduction
- Calculate scenario risk with a matrix and flag candidates for LOPA — protection layer decisions
- Design facilitation tactics that keep a multidisciplinary team focused — session productivity and quality
- Build a recommendation close-out tracker with clear owners and verification — plant management and auditors

Key Process HAZOP Study Leadership Terms

- Node — a section of the process, defined on a P&ID, that the team examines against a stated design intent.
- Guideword — a short word such as more, less, no or reverse, combined with a parameter to prompt a deviation.
- Deviation — a departure from design intent, for example high pressure or no flow, that the team analyses for causes.
- Safeguard — an existing device, control or procedure that prevents a cause or limits the consequence of a deviation.
- Independent protection layer — a safeguard that is effective, independent of the initiating cause and auditable, credited in LOPA.
- Study close-out — the verified completion of every HAZOP recommendation, with evidence that the scenario risk was reduced.

Process HAZOP Study Leadership Day by Day

Day 1: HAZOP in the Process Safety Landscape

- Hazard Identification Methods Compared — When HAZOP Is the Right Choice
- IEC 61882 Study Structure — Roles, Phases and Documentation
- Lessons From Process Incidents — Missed Deviations and Their Cost
- Process Safety Information Requirements — Readiness of P&IDs and Data
- Study Terms of Reference — Scope, Boundaries and Objectives

Day 2: Preparing the Study

- Node Selection on P&IDs — Granularity Versus Session Time
- Design Intent Statements — Anchoring Deviations to Process Conditions
- Team Composition and Competence — Disciplines Needed in the Room
- Pre-Study Briefing Pack — Drawings, Cause and Effect Charts, Data Sheets
- Session Scheduling and Fatigue Limits — Protecting Study Quality

Day 3: Guidewords, Parameters and Deviations

- Guideword and Parameter Matrices — Generating a Credible Deviation List
- Flow, Pressure and Temperature Deviations — Typical Causes on Process Lines
- Level, Composition and Reaction Deviations — Vessels and Reactors
- Start-Up, Shutdown and Maintenance Modes — Non-Routine Deviations
- Deviation Screening Rules — Avoiding Trivial or Duplicated Entries

Day 4: Causes, Consequences and Safeguards

- Cause Identification — Equipment Failure, Human Error and External Events
- Consequence Development — Escalation Without Credit for Safeguards
- Safeguard Evaluation — Independence, Effectiveness and Testability
- Alarm and Operator Response Credit — Realistic Response Times
- Relief and Containment Checks — Overpressure and Loss of Containment

Day 5: Facilitating the HAZOP Team

- Facilitation Techniques — Keeping Discussion on the Deviation
- Managing Dominant and Silent Participants — Balanced Expert Input
- Parking and Escalating Issues — Holding Session Momentum
- Virtual and Hybrid Sessions — Screen Sharing and Recording Discipline
- Leader Bias and Groupthink Checks — Challenging Easy Conclusions

Day 6: Recording and the HAZOP Worksheet

- Worksheet Column Discipline — Cause, Consequence, Safeguard and Action
- Scribe Techniques and Software Templates — Fast, Auditable Records
- Writing SMART Recommendations — Clear, Verifiable Actions
- Cross-Referencing Drawings and Tags — Traceability for Auditors
- Daily Record Reviews — Correcting Gaps Before They Multiply

Day 7: Risk Ranking and LOPA Links

- Risk Matrix Calibration — Severity and Likelihood Categories
- Scenario Risk Ranking — Prioritising Recommendations
- Selecting Scenarios for LOPA — Thresholds for Further Analysis
- Initiating Event Frequencies and Protection Layer Credits — LOPA Basics
- Safety Instrumented Function Candidates — Handing Over to Design

Day 8: Special Applications of HAZOP

- Batch and Procedural HAZOP — Step-by-Step Operating Instructions
- Control System and Alarm HAZOP — Logic and Interlock Failures
- Brownfield Modification Studies — Interfaces With Existing Plant
- Revalidation HAZOP — Reviewing Studies for Operating Facilities
- Management of Change Screening — When a New HAZOP Is Needed

Day 9: Recommendations and Close-Out

- Recommendation Response Workflow — Accept, Modify or Reject With Justification
- Close-Out Evidence Standards — Drawings, Procedures and Test Records
- Action Tracking Registers — Owners, Due Dates and Escalation
- Residual Risk Sign-Off — Accountability for Rejected Actions
- HAZOP Report Structure — What Auditors and Insurers Expect

Day 10: Practising the HAZOP Study Pack

- Node Breakdown on a Case P&ID Applied — Study Preparation
- Live Session on Guidewords and Safeguards Applied — Leader and Scribe Rotation
- Risk Ranking and LOPA Screening Applied — Prioritised Scenario List
- Facilitation Feedback Applied — Peer Observation of Study Leaders
- HAZOP Study Pack — Terms of Reference, Worksheets and Close-Out Tracker

Applying Process HAZOP Study Leadership After the Course

- Lead a revalidation of one node from an existing study using the guideword matrix and safeguard independence tests taught, then compare the result with the original worksheet.
- Audit the open recommendations of a recent study against the close-out evidence standards and present the overdue actions to the plant leadership.

Process HAZOP Study Leadership Questions FAQ

What is Process HAZOP Study Leadership and why does it matter now?

Process HAZOP Study Leadership is the skill of steering a hazard and operability study from scope to close-out. It matters now because plant modifications, ageing assets and close scrutiny of study records make weak HAZOP leadership a direct source of unmanaged process risk.

Which roles gain most from Process HAZOP Study Leadership training?

HAZOP leaders, scribes and process safety engineers gain most, together with design and operations engineers who regularly sit on study teams. You benefit if you chair sessions, record them or own the recommendations that follow.

How does Process HAZOP Study Leadership differ from a basic HAZOP awareness course?

An awareness course explains guidewords and the worksheet to team members. This advanced course trains the people who run the study: node selection, facilitation, safeguard challenge, risk ranking, links to LOPA and recommendation close-out across chemical, refining and gas processing examples.

What do you bring back from Process HAZOP Study Leadership training?

You bring back a HAZOP study pack built on a case P&ID, with a terms of reference, node register, completed worksheets, ranked scenarios and a close-out tracker you can adapt for your next study.

Process HAZOP Study Leadership: The Way Forward

The HAZOP study pack first informs how the next study at the facility is scoped, staffed and scheduled. Study leaders, scribes and process safety engineers use it to align their method, worksheet discipline and close-out evidence. After its first use, the risk matrix calibration and the criteria for sending scenarios to LOPA are worth revisiting, because they decide where engineering effort goes.