Advanced Process Safety Management (PSM) Training Course

Professional Development Training Course Outline

Category	Oil and Gas	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today's high-risk industrial environments, Advanced Process Safety Management (PSM) has become essential for ensuring sustainable operations, regulatory compliance, and workforce safety. Advanced Process Safety Management (PSM) Training Course is meticulously designed to equip safety professionals, engineers, and operational leaders with the tools and expertise required to manage complex process systems, mitigate hazards, and implement world-class safety protocols.

Utilizing real-time case studies, cutting-edge industry practices, and interactive modules, this course blends theoretical foundations with practical insights. From advanced hazard identification techniques to quantitative risk assessments (QRAs), layer of protection analysis (LOPA), and emergency response planning, participants will gain an in-depth understanding of process safety standards such as OSHA 1910.119, API RP 754, and IEC 61511. This course is ideal for organizations looking to foster a proactive safety culture and meet global PSM expectations.

Programme Curriculum

Advanced Process Safety Management (PSM) Training Course

Introduction

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Course Objectives

1. Understand the core principles of Advanced Process Safety Management (PSM)
2. Identify and assess critical process safety hazards using modern tools
3. Apply root cause analysis and failure investigation techniques
4. Design and implement effective risk control measures
5. Analyze process safety incidents to improve future performance
6. Understand compliance strategies for OSHA PSM standards
7. Evaluate safety integrity levels (SIL) and instrumentation requirements
8. Execute effective layer of protection analysis (LOPA)
9. Integrate human factors engineering in process safety design
10. Conduct HAZOP and What-If safety reviews
11. Develop and test emergency response and mitigation plans
12. Monitor performance using PSM metrics and leading indicators
13. Foster a process safety culture and leadership commitment

Target Audiences

1. Process Safety Engineers
2. HSE (Health, Safety & Environment) Managers
3. Operations and Plant Managers
4. Risk Management Professionals
5. Mechanical and Chemical Engineers
6. Compliance Officers
7. Emergency Response Planners
8. Industrial Safety Consultants

Course Duration: 5 days

Course Modules

Module 1: Foundations of Advanced PSM

- Evolution of Process Safety Management
- Key PSM elements and OSHA 1910.119
- Role of safety culture in high-risk industries
- Responsibilities and accountabilities in PSM
- Introduction to key international standards (API, IEC, NFPA)

- **Case Study**: Bhopal Disaster – A Turning Point in Process Safety

Module 2: Hazard Identification & Risk Analysis

- Advanced HAZOP methodologies
- Bow-tie analysis and fault tree analysis
- What-If and Checklist reviews
- Inherently safer design principles
- Risk matrix applications
- **Case Study**: Piper Alpha Explosion and Hazard Recognition Failures

Module 3: Process Safety Information & Technology Integration

- Documentation and control of safety data
- Use of P&IDs and process flow diagrams in safety planning
- Integration of AI and digital twins in safety analytics
- Chemical reactivity and thermal stability data
- Technology management for process changes
- **Case Study**: Texas City Refinery – Inadequate Safety Info

Module 4: Operating Procedures and Safe Work Practices

- Development of standard operating procedures (SOPs)
- Lockout/Tagout (LOTO) protocols
- Permit-to-work systems
- Managing shift handovers
- Job safety analysis (JSA) and human error reduction
- **Case Study**: Tesoro Anacortes – Operating Procedure Deviations

Module 5: Mechanical Integrity & Equipment Reliability

- Preventive and predictive maintenance strategies
- RAGAGEP (Recognized And Generally Accepted Good Engineering Practices)
- Inspection and testing protocols
- Asset integrity and corrosion management
- Managing aging infrastructure
- **Case Study**: BP Texas City – Equipment Integrity Breakdown

Module 6: Management of Change (MOC) and Pre-Startup Safety Reviews

- MOC system design and implementation
- Evaluating proposed changes for safety impact
- Roles and responsibilities in MOC
- Documentation and communication of changes
- Conducting effective pre-startup reviews
- **Case Study**: Valero McKee Explosion – MOC Failures

Module 7: Emergency Preparedness and Incident Investigation

- Emergency response planning and drills
- Incident investigation methods (TapRooT, RCA)
- Developing and maintaining emergency action plans (EAP)
- Communicating during a process emergency
- Learning from near misses and process deviations
- **Case Study**: Deepwater Horizon – Crisis Response Breakdown

Module 8: Safety Culture, Leadership & PSM Metrics

- Building and sustaining a safety culture
- Leadership roles in process safety
- Using leading and lagging indicators effectively
- Continuous improvement strategies in PSM
- Engaging workforce in safety programs
- **Case Study**: DuPont La Porte – Cultural Gaps and Leadership Failures

Training Methodology

- Instructor-led interactive sessions
- Real-world case studies and group discussions
- Role-playing and scenario-based learning
- Hands-on workshops with hazard simulation tools
- Pre-and post-training assessments and feedback

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com