MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

TECHNICAL SAFETY MANAGEMENT

"Integrating Engineering Controls with Risk-Based Safety Systems for High-Reliability Operations"

Schedule

Venue (InHouse)	Fees
At Your Organization Premises	Ask For The Quotation

► **Available delivery methods:** Face-to-Face & Online Training, In-House Training

Introduction

Technical Safety Management (TSM) is a structured approach to managing hazards and reducing risk in high-risk industries such as oil & gas, petrochemicals, mining, and energy. This 5-day course offers in-depth coverage of technical safety principles, process hazard analysis, engineering controls, and compliance with international safety standards. Participants will gain critical insight into how to build, implement, and continuously improve a robust Technical Safety Management System that aligns with operational excellence and corporate governance.

Objectives

Upon successful completion of this course, participants will be able to:

- Understand the fundamentals of Technical Safety and its role in risk reduction
- Apply tools such as HAZOP, LOPA, SIL, QRA, and Bow-Tie Analysis
- Evaluate and implement engineered safeguards and barriers
- Align safety programs with ISO, IEC, API, and other global standards
- Integrate human factors and operational discipline into safety systems

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Why Attend

- Learn industry-leading methods for managing process and technical safety
- Enhance decision-making through risk-based analysis and modeling
- Reduce exposure to major accidents and asset losses
- Improve regulatory compliance and audit readiness

Target Audience

- Safety, Health, and Environment (HSE) Managers
- Process and Technical Safety Engineers
- Operations and Maintenance Managers
- Risk and Compliance Specialists
- Project Engineers involved in design, commissioning, or shutdowns

Individual Benefits

- Gain confidence in managing high-risk scenarios
- Apply risk-based thinking to technical operations
- Master industry-recognized safety tools and methods
- Enhance career prospects in safety-critical industries

Organizational Benefits

- Reduce likelihood of major accidents and production losses
- Align with global safety and risk management standards
- Improve reliability and resilience of technical systems
- Embed a culture of safety across engineering and operations

Instructional Methodology

- Case-based learning and technical workshops
- Hands-on modeling using real-world datasets
- Interactive sessions using Bow-Tie and LOPA tools
- Group activities and barrier analysis simulations
- Capstone presentation with peer reviews

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Course Outline

DETAILED 5-DAY COURSE OUTLINE (CUSTOMIZABLE)

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: Introduction to Technical Safety Management

- Module 1: Principles of Technical Safety (07:30 – 09:30)
- Definitions, scope, and interfaces with process safety and HSE
- Module 2: Safety Lifecycle & Regulatory Requirements (09:45 – 11:15)
- Legal frameworks, industry codes (API, ISO 45001, IEC 61511)
- Module 3: Risk-Based Approach to Safety (11:30 – 01:00)
- Risk matrix, tolerability criteria, ALARP
- Module 4: Workshop – Safety Culture Assessment (02:00 – 03:30)

Day 2: Hazard Identification and Risk Assessment

- Module 1: Hazard Identification Techniques (07:30 – 09:30)
- HAZID, HAZOP, What-If, Checklist Methods
- Module 2: Introduction to Bow-Tie Analysis (09:45 – 11:15)
- Module 3: Risk Assessment Tools – LOPA & SIL (11:30 – 01:00)
- Module 4: Case Study – Fire & Explosion Scenario (02:00 – 03:30)

Day 3: Engineering Controls and Safeguards

- Module 1: Safety Instrumented Systems (SIS) (07:30 – 09:30)
- SIL assignment, reliability, and testing
- Module 2: Passive vs. Active Safety Systems (09:45 – 11:15)
- Pressure relief, gas detection, fire suppression
- Module 3: Barrier Management & Layer of Protection (11:30 – 01:00)
- Module 4: Practical Exercise – Barrier Failure Mapping (02:00 – 03:30)

Day 4: Emergency Management and Performance Monitoring

- Module 1: Emergency Response Planning & Mitigation (07:30 – 09:30)
- Module 2: Human Factors in Technical Safety (09:45 – 11:15)
- Interface design, procedures, fatigue risk
- Module 3: Auditing & Performance Monitoring of Safety Systems (11:30 – 01:00)
- Module 4: Scenario – Simulated Technical Safety Audit (02:00 – 03:30)

Day 5: Implementation, Case Study, and Certification

- Module 1: Building a Technical Safety Management System (TSMS) (07:30 – 09:30)
- Structure, documentation, and governance
- Module 2: Integrated Risk Management Frameworks (09:45 – 11:15)
- Module 3: Capstone Project – Technical Safety Design Review (11:30 – 01:00)
- Team presentations and feedback
- Module 4: Certification Ceremony and Wrap-Up (02:00 – 03:30)

Certification

Certificate of Completion – Technical Safety Management Course includes digital templates for Bow-Tie Analysis, SIL Assessment, Safety Case format, and HAZOP worksheets.

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Why Choose MAWA Events

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In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: **+601116373203**	EMAIL: **info@mawaevents.net**

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