MAWA EVENTS

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

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

PIPELINE SYSTEMS – DESIGNING, CONSTRUCTION, MAINTENANCE & ASSET MANAGEMENT

"Comprehensive Strategies for Safe, Cost-Effective, and Sustainable Pipeline Operations"

Schedule

Date	Venue	Fees (Face-to-Face)
13 – 17 Sep 2026	Doha, Qatar	USD 3,495 per delegate
15 – 19 Nov 2026	Manama, Bahrain	USD 3,495 per delegate

Introduction

Pipeline systems are essential to the safe and efficient transportation of oil, gas, water, and other industrial fluids across vast distances. The design, construction, and management of these systems must meet stringent safety, regulatory, and performance requirements while optimizing long-term operational costs.

This intensive course provides a full-spectrum approach to pipeline systems—from conceptual design through construction, inspection, maintenance, and asset integrity management. Participants will gain technical knowledge and strategic insights to ensure pipeline performance, minimize risks, and extend asset life.

Objectives

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

- Design pipeline systems based on fluid properties, terrain, and operational demands
- Apply best practices in pipeline construction, welding, testing, and commissioning
- Implement proactive maintenance and inspection strategies
- Manage pipeline integrity using risk-based and data-driven methods
- Ensure regulatory compliance and environmental safety

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Why Attend

- Gain a complete understanding of the pipeline lifecycle
- Reduce failures, leaks, and downtime through proper design and maintenance
- Learn advanced techniques in pipeline inspection, monitoring, and integrity evaluation
- Develop asset management strategies to optimize cost and extend service life
- Stay compliant with international codes (API, ASME, ISO) and industry regulations

Target Audience

This program is designed for:

- Pipeline engineers and designers
- Maintenance and reliability engineers
- Project and construction managers
- Asset integrity and corrosion specialists
- Operations and HSE personnel in pipeline systems

Individual Benefits

Key competencies that will be developed include:

- Pipeline design calculations and material selection
- Construction methods, QA/QC, and welding standards
- Failure mode analysis and condition assessment
- Risk-based inspection (RBI) and fitness-for-service (FFS) evaluations
- Asset lifecycle management planning

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved safety and reliability of pipeline operations
- Lower repair costs and reduced risk of environmental incidents
- Better planning for capital projects and asset renewal
- Stronger regulatory compliance and documentation
- Enhanced collaboration between engineering, maintenance, and operations teams

Instructional Methodology

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

- Strategy Briefings – Design codes, construction standards, and regulatory frameworks
- Case Studies – Failures and lessons learned from global pipeline projects
- Workshops – Pipeline sizing, risk assessments, and inspection planning
- Peer Exchange – Cross-industry experience sharing on best practices
- Tools – Design templates, inspection checklists, and asset management models

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Course Outline

Detailed 5-Day 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: Pipeline Design Fundamentals

- Module 1: Introduction to Pipeline Systems (07:30 – 09:30) • Overview of pipeline operations and classification • Fluid properties, flow regimes, and system configurations
- Module 2: Pipeline Route and Hydraulic Design (09:45 – 11:15) • Flow calculations, pressure drops, and elevation considerations
- Module 3: Workshop – Pipeline Sizing and Wall Thickness (11:30 – 01:00) • API and ASME design equation applications
- Module 4: Peer Exchange – Design Challenges in Real Projects (02:00 – 03:30) • Group sharing on terrain, climate, and urban interface issues

Day 2: Construction, Welding, and Commissioning

- Module 5: Pipeline Construction Methods (07:30 – 09:30) • Trenching, stringing, bending, tie-in, and backfilling techniques
- Module 6: Welding, NDT, and QA/QC (09:45 – 11:15) • Weld types, standards, inspection, and documentation
- Module 7: Workshop – Hydrostatic Testing and Commissioning Plan (11:30 – 01:00) • Develop a pressure testing procedure
- Module 8: Case Study – Construction Delay Analysis (02:00 – 03:30) • Evaluate a project timeline and quality failure

Day 3: Inspection, Monitoring, and Integrity Management

- Module 9: In-Line Inspection and External Surveys (07:30 – 09:30) • PIGs, corrosion mapping, ultrasonic and magnetic testing
- Module 10: Pipeline Integrity Threats and Risk Management (09:45 – 11:15) • Corrosion, cracking, mechanical damage, and geohazards
- Module 11: Workshop – Risk-Based Inspection (RBI) Plan (11:30 – 01:00) • Create a prioritization matrix based on probability and consequence
- Module 12: Peer Exchange – Managing High-Risk Segments (02:00 – 03:30) • Review of past failure events and mitigation steps

Day 4: Maintenance Strategies and Emergency Response

- Module 13: Maintenance Planning and Scheduling (07:30 – 09:30) • Preventive, condition-based, and corrective approaches
- Module 14: Emergency Shutdown and Leak Detection (09:45 – 11:15) • SCADA, sensors, alarms, and pipeline isolation
- Module 15: Workshop – Maintenance Optimization Matrix (11:30 – 01:00) • Balance cost, criticality, and frequency
- Module 16: Case Study – Pipeline Failure and Root Cause Analysis (02:00 – 03:30) • Analysis of a high-consequence leak

Day 5: Asset Management and Future Technologies

- Module 17: Pipeline Asset Lifecycle Planning (07:30 – 09:30) • Asset condition scoring, renewal planning, and CAPEX forecasts
- Module 18: Digital Tools and Smart Pipeline Technologies (09:45 – 11:15) • IoT sensors, GIS, digital twins, and cloud-based asset platforms
- Module 19: Final Project – Asset Management Strategy Presentation (11:30 – 01:00) • Team presentations of a full lifecycle plan
- Module 20: Wrap-Up, Feedback, and Certification (02:00 – 03:30) • Summary discussion and certificate award

Certification

Participants will receive a Certificate of Completion in Pipeline Systems – Designing, Construction, Maintenance & Asset Management, validating their expertise in managing pipeline systems across the full lifecycle using industry-aligned practices.

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Why Choose MAWA Events

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