

ADVANCED PIPELINE MAINTENANCE AND REPAIR

“Ensuring Pipeline Integrity Through Advanced Maintenance and Repair Techniques.”

Schedule

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

► **Available delivery methods:** In-House Training

Introduction

Pipeline systems are the lifelines of the oil, gas, and water industries. This comprehensive course focuses on the advanced methodologies used to maintain and repair pipelines while minimizing risk, downtime, and environmental impact. Participants will gain in-depth knowledge of both conventional and cutting-edge techniques, including in-line inspection, non-intrusive monitoring, composite repairs, and emergency response procedures. The course blends theory with real-life case studies and field-applicable practices to enhance operational safety and pipeline integrity.

Objectives

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

- Identify causes of pipeline failures and degradation mechanisms
- Apply advanced pipeline inspection and defect assessment techniques
- Evaluate repair methods, including composite wrap, clamp, welding, and hot tapping
- Plan preventive maintenance strategies and emergency repair actions
- Ensure compliance with relevant pipeline safety and environmental standards

Why Attend

This course provides the essential knowledge and technical confidence required to maintain safe, efficient, and cost-effective pipeline operations—especially in aging infrastructure and high-risk environments.

Target Audience

- Pipeline engineers and technicians
- Integrity and maintenance managers
- Oil & gas field operators
- Inspection and corrosion specialists
- Asset and reliability engineers

Individual Benefits

- Deepen your expertise in pipeline integrity management
- Improve decision-making in pipeline failure prevention and emergency response
- Stay updated with the latest international codes and standards
- Gain hands-on repair and maintenance planning skills

Organizational Benefits

- Reduce unplanned downtime and costly pipeline failures
- Enhance safety and environmental compliance
- Extend pipeline service life through optimized maintenance programs
- Build internal capacity for advanced pipeline reliability practices

Instructional Methodology

- Real-world case studies and failure analysis
- Hands-on simulation of repair techniques
- Technical discussions with standards-based guidance
- Interactive group activities and decision-making exercises

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: Pipeline Integrity and Failure Mechanisms

- Module 1: Pipeline Systems Overview and Lifespan Challenges (07:30 – 09:30)
- Module 2: Common Failure Modes: Corrosion, Cracking, Fatigue, External Damage (09:45 – 11:15)
- Module 3: Pipeline Material Properties and Stress Analysis (11:30 – 01:00)
- Module 4: Case Study: Historical Pipeline Failures and Lessons Learned (02:00 – 03:30)

Day 2: Inspection, Monitoring, and Assessment

- Module 1: In-Line Inspection (ILI): PIGs, UT, MFL, and Smart Sensors (07:30 – 09:30)
- Module 2: Non-Destructive Testing (NDT) for Surface and Subsurface Defects (09:45 – 11:15)
- Module 3: External Inspection Techniques and Right-of-Way Monitoring (11:30 – 01:00)
- Module 4: Defect Assessment: Fitness-for-Service & Remaining Life Analysis (02:00 – 03:30)

Day 3: Advanced Pipeline Repair Techniques

- Module 1: Overview of Repair Methodologies and Selection Criteria (07:30 – 09:30)
- Module 2: Welded Sleeves, Mechanical Clamps, and Composite Wraps (09:45 – 11:15)
- Module 3: Live Pipeline Repairs: Hot Tapping, Line Stopping, and Isolation (11:30 – 01:00)
- Module 4: Hands-On Simulation: Composite Repair Design and Application (02:00 – 03:30)

Day 4: Preventive Maintenance and Risk Management

- Module 1: Pipeline Maintenance Strategies: Risk-Based vs Time-Based (07:30 – 09:30)
- Module 2: Cathodic Protection and Coating Systems (09:45 – 11:15)
- Module 3: Pipeline Risk Assessment Tools and Mitigation Planning (11:30 – 01:00)
- Module 4: Integration with Integrity Management Systems (IMS) (02:00 – 03:30)

Day 5: Emergency Response and Compliance

- Module 1: Emergency Pipeline Repair Plans and Resource Mobilization (07:30 – 09:30)
- Module 2: Environmental Impact Management and Regulatory Frameworks (09:45 – 11:15)
- Module 3: Final Project: Pipeline Repair Planning and Failure Response Simulation (11:30 – 01:00)
- Module 4: Course Recap, Q&A, Certification Distribution (02:00 – 03:30)

Certification

Participants who complete the full course and assessments will be awarded the Certificate in Advanced Pipeline Maintenance and Repair, confirming their technical competency in maintaining safe, reliable pipeline operations using advanced inspection and repair techniques.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
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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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