



Maintenance & Reliability Management

Pipeline & Piping Maintenance & Rehabilitation

Course Introduction

Pipeline and piping systems are vital to industries like oil, gas, and water supply, and proper maintenance and rehabilitation are essential for their reliable operation. Regular maintenance prevents failures, reduces operational costs, and extends the life of pipelines, ensuring safe and efficient transport of materials.

This training program focuses on equipping participants with the knowledge and practical skills needed to inspect, maintain, and rehabilitate pipeline systems effectively. Participants will learn the latest techniques for monitoring and managing pipelines, understanding when rehabilitation is necessary, and implementing solutions that improve pipeline performance and minimize downtime. The program includes real-world case studies and hands-on exercises for a thorough learning experience.

Target Audience

This course is designed for maintenance engineers, technicians, and operators involved in the upkeep and rehabilitation of pipeline and piping systems.

Learning Objectives

- Understand the key components and functions of pipeline and piping systems.
- Learn various inspection and monitoring techniques for pipeline condition assessment.
- Gain knowledge of maintenance strategies to prevent pipeline failures and extend their life.
- Understand the methods and techniques for rehabilitating aging pipelines.

- Learn how to optimize pipeline performance and implement cost-effective maintenance solutions.

Course Outline

• 01 DAY ONE

Introduction to Pipeline & Piping Systems

- Overview of pipeline and piping systems
- Key components of pipelines and piping networks
- Types of pipeline materials and their properties
- Importance of pipeline design in maintenance and rehabilitation
- Factors affecting pipeline performance and integrity
- Common pipeline and piping system failures
- Regulatory standards for pipeline and piping systems

• 02 DAY TWO

Inspection and Monitoring of Pipelines

- Methods of pipeline inspection: visual, ultrasonic, X-ray
- Types of monitoring tools and technologies (e.g., smart pigs, sensors)
- Identifying signs of corrosion and wear
- Techniques for leak detection and prevention
- Setting up a regular inspection schedule
- Importance of pipeline condition assessment
- Documentation and reporting of inspection results

• 03 DAY THREE

Maintenance Techniques for Pipelines

- Preventive maintenance strategies for pipelines
- Cleaning and flushing pipelines
- Corrosion protection methods (e.g., coatings, cathodic protection)
- Pipeline repair methods: mechanical and welding techniques
- Repairing leaks and cracks in piping systems
- Managing pressure and temperature issues in pipelines
- Importance of routine maintenance to extend pipeline life

• 04 DAY FOUR

Rehabilitation of Aging Pipelines

- Identifying pipelines requiring rehabilitation
- Techniques for rehabilitating old pipelines (e.g., relining, sliplining)
- Use of composite materials for pipeline rehabilitation
- Benefits and challenges of pipeline rehabilitation
- Cost-benefit analysis of pipeline rehabilitation vs. replacement
- Regulatory considerations for pipeline rehabilitation
- Case studies of successful pipeline rehabilitation projects

• 05 DAY FIVE

Pipeline & Piping System Performance and Optimization

- Performance metrics for pipeline systems
- Optimizing pipeline efficiency and reducing operational costs
- Monitoring and managing pipeline flow rates
- Analyzing the impact of pipeline issues on overall system performance
- Implementing upgrades to improve pipeline longevity
- Emergency preparedness and response for pipeline failures

Confirmed Sessions

| FROM | TO | DURATION | FEES | LOCATION |
|----------------|----------------|----------|------------|------------------|
| April 13, 2025 | April 17, 2025 | 5 days | 4250.00 \$ | Qatar - El Doha |
| Aug. 25, 2025 | Aug. 29, 2025 | 5 days | 4950.00 \$ | England - London |
| Dec. 29, 2025 | Jan. 2, 2026 | 5 days | 4250.00 \$ | UAE - Abu Dhabi |