

MATERIALS AND CORROSION MANAGEMENT IN OIL AND GAS FACILITIES

"Protecting Assets and Enhancing Reliability through Effective Corrosion Management"

Schedule

Date	Venue	Fees (Online)
21 - 22 Jul 2026	Online	USD 700 per delegate

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

Introduction

Corrosion and material degradation are among the leading causes of asset failure, operational downtime, and safety incidents in oil and gas facilities. Effective materials and corrosion management ensure asset integrity, extend equipment life, and maintain safety and operational reliability.

This intensive 2-day online course provides participants with practical knowledge and tools for identifying, preventing, and managing corrosion in oil and gas facilities. Participants will learn about material selection, corrosion mechanisms, inspection methods, and mitigation strategies to protect critical infrastructure.

Objectives

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

- Understand the principles of materials selection for oil and gas facilities
- Identify common corrosion types and mechanisms
- Implement corrosion monitoring and inspection techniques
- Apply preventive and mitigation strategies effectively
- Integrate corrosion management into maintenance and operational programs
- Enhance asset reliability, safety, and compliance with industry standards

Why Attend

- Learn to prevent material failures and minimize downtime
- Understand industry standards and best practices in corrosion management
- Improve safety, reliability, and cost-efficiency of assets
- Gain practical knowledge for inspection, monitoring, and maintenance
- Strengthen operational decision-making regarding materials and corrosion

Target Audience

This program is designed for:

- Mechanical, materials, and corrosion engineers
- Maintenance and reliability engineers
- Asset integrity and inspection professionals
- Operations and facility managers
- Technical staff responsible for equipment maintenance and safety

Individual Benefits

Key competencies that will be developed include:

- Understanding corrosion types, mechanisms, and contributing factors
- Skills in selecting appropriate materials for oil and gas applications
- Knowledge of monitoring, inspection, and mitigation techniques
- Ability to integrate corrosion management into maintenance planning
- Enhanced problem-solving skills for asset integrity issues

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved asset reliability and operational uptime
- Reduced maintenance and replacement costs
- Enhanced compliance with safety and industry standards
- Stronger corrosion management and asset integrity programs
- Reduced risk of incidents and environmental impact

Instructional Methodology

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

- Strategy Briefings - Corrosion principles, material selection, and management strategies
- Case Studies - Real-world examples of corrosion failures and lessons learned
- Workshops - Exercises on material evaluation, risk assessment, and mitigation planning
- Peer Exchange - Group discussions on operational challenges and solutions
- Tools - Inspection templates, corrosion monitoring checklists, and preventive action plans

Course Outline

Detailed 2-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: Fundamentals of Materials and Corrosion

Module 1: Introduction to Materials and Corrosion (07:30 – 09:30)

- Overview of materials used in oil and gas facilities
- Common corrosion types and mechanisms
- Impact on safety, reliability, and operational efficiency

Module 2: Corrosion in Oil and Gas Systems (09:45 – 11:15)

- Corrosion in pipelines, vessels, heat exchangers, and equipment
- Environmental factors influencing corrosion
- Material degradation case studies

Module 3: Material Selection Principles (11:30 – 01:00)

- Criteria for selecting materials for corrosive environments
- Alloys, coatings, and protective materials
- Compatibility with operational and environmental conditions

Module 4: Workshop – Corrosion Case Analysis (02:00 – 03:30)

- Analysis of real-world corrosion failures
- Identification of root causes and mitigation approaches

Day 2: Corrosion Management and Mitigation Strategies

Module 5: Corrosion Monitoring and Inspection (07:30 – 09:30)

- Techniques for corrosion detection and monitoring
- Non-destructive testing (NDT) and inspection methods
- Data interpretation and reporting

Module 6: Corrosion Prevention and Mitigation (09:45 – 11:15)

- Protective coatings, inhibitors, and cathodic protection
- Maintenance planning and lifecycle management
- Best practices for reducing corrosion risk

Module 7: Integrating Corrosion Management into Operations (11:30 – 01:00)

- Corrosion management programs and policies
- Risk assessment and prioritization of mitigation actions
- Continuous improvement strategies

Module 8: Workshop – Corrosion Management Plan (02:00 – 03:30)

- Developing a comprehensive corrosion management strategy
- Applying lessons learned to real operational scenarios
- Q&A and action planning

Certification

Participants will receive a Certificate of Completion in Materials and Corrosion Management in Oil and Gas Facilities, validating their expertise in corrosion mechanisms, materials selection, inspection, and mitigation strategies to ensure asset integrity and reliability.

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