MAWA EVENTS

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

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CORROSION ENGINEERING AND CORROSION MANAGEMENT FOR THE OIL AND GAS INDUSTRY

"Mitigating Corrosion Risks – Protecting Critical Infrastructure in the Oil and Gas Sector"

Schedule

Date	Venue	Fees (Face-to-Face)
24 – 28 Aug 2026	London - UK	USD 3495 per delegate

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

Introduction

Corrosion is one of the most significant challenges in the oil and gas industry, impacting the longevity and safety of infrastructure such as pipelines, platforms, and storage tanks. Effective corrosion management is essential to prevent catastrophic failures, reduce maintenance costs, and ensure regulatory compliance. This 5-day intensive course is designed to provide oil and gas professionals with a deep understanding of corrosion engineering and the strategies required for successful corrosion management in this high-risk industry.

The course will cover a range of topics, from the fundamental principles of corrosion to advanced management techniques, and equip participants with the tools needed to implement effective corrosion control programs. Real-world case studies, hands-on exercises, and expert-led discussions will ensure that participants can apply these concepts to their day-to-day operations.

Objectives

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

- Understand the mechanisms of corrosion specific to the oil and gas industry
- Identify the types of corrosion and their impacts on oil and gas infrastructure
- Develop and implement corrosion control strategies and prevention techniques
- Apply material selection and coating methods to mitigate corrosion risks
- Evaluate and manage corrosion monitoring and testing methods
- Design and maintain effective corrosion management programs

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Why Attend

- Gain a comprehensive understanding of corrosion principles and their impact on oil and gas assets
- Learn how to implement effective corrosion management strategies to minimize operational disruptions
- Enhance your ability to identify corrosion risks early and implement preventative measures
- Discover the latest technologies and best practices in corrosion monitoring and testing
- Network with industry professionals and share practical insights on tackling corrosion challenges in the oil and gas sector

Target Audience

This program is designed for:

- Corrosion engineers, material engineers, and specialists working in oil and gas
- Maintenance and reliability professionals responsible for infrastructure integrity
- Asset managers and operational managers overseeing production and storage assets
- Safety and risk managers responsible for corrosion-related hazards
- Procurement and project managers involved in selecting materials and vendors for oil and gas projects

Individual Benefits

Key competencies that will be developed include:

- Advanced understanding of corrosion types and their impact on oil and gas infrastructure
- Expertise in corrosion control and mitigation techniques specific to the oil and gas industry
- Ability to implement and monitor effective corrosion management programs
- Enhanced skills in material selection, coatings, and corrosion-resistant technologies
- Capability to conduct and interpret corrosion testing and monitoring data

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved ability to prevent corrosion-related failures and reduce downtime
- More cost-effective maintenance strategies, reducing the need for costly repairs
- Increased operational safety through better corrosion management and monitoring
- Stronger compliance with industry standards and regulations for corrosion control
- Enhanced ability to develop long-term strategies for maintaining asset integrity

Instructional Methodology

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

- Strategy Briefings – Detailed explanation of corrosion mechanisms and management principles
- Case Studies – Real-world examples of successful corrosion management programs in the oil and gas industry
- Workshops – Hands-on activities to develop corrosion control strategies, select materials, and conduct testing
- Peer Exchange – Group discussions on challenges faced in corrosion management and practical solutions
- Tools – Corrosion control tools and methodologies, including monitoring and testing technologies

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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: Introduction to Corrosion in the Oil and Gas Industry

- Module 1: Fundamentals of Corrosion (07:30 – 09:30)
- Definition and causes of corrosion
- Corrosion mechanisms specific to oil and gas environments (uniform corrosion, pitting, etc.)
- The role of environmental factors in accelerating corrosion
- Module 2: Types of Corrosion in Oil and Gas (09:45 – 11:15)
- Types of corrosion (galvanic, crevice, microbiologically influenced corrosion)
- Corrosion in pipelines, tanks, offshore platforms, and refineries
- Factors influencing corrosion rates in the oil and gas industry
- Module 3: Consequences of Corrosion (11:30 – 01:00)
- Impact of corrosion on asset integrity, safety, and the environment
- Economic costs of corrosion-related failures
- Regulatory standards and compliance in corrosion management

Day 2: Corrosion Control and Prevention Techniques

- Module 4: Materials Selection for Corrosion Resistance (07:30 – 09:30)
- Choosing the right materials for different environments
- Alloying and coating techniques for corrosion resistance
- Stainless steel, corrosion-resistant alloys, and composite materials
- Module 5: Coating and Cathodic Protection (09:45 – 11:15)
- Types of coatings and their application methods
- Cathodic protection systems and their role in corrosion prevention
- Design and maintenance of cathodic protection systems
- Module 6: Corrosion Inhibition (11:30 – 01:00)
- Types of corrosion inhibitors used in oil and gas applications
- How inhibitors work and their limitations
- Injection systems and monitoring the effectiveness of corrosion inhibitors

Day 3: Corrosion Monitoring and Testing

- Module 7: Monitoring Corrosion in Oil and Gas Assets (07:30 – 09:30)
- Corrosion monitoring techniques: corrosion coupons, electrical resistance, ultrasonic testing
- Real-time monitoring technologies and their applications
- Data interpretation and maintenance strategies based on monitoring results
- Module 8: Corrosion Testing Methods (09:45 – 11:15)
- Laboratory testing for corrosion rates and material performance
- Standard corrosion testing methods (ASTM, ISO)
- How to conduct field-based corrosion testing effectively
- Module 9: Non-Destructive Testing for Corrosion Detection (11:30 – 01:00)
- NDT methods for detecting corrosion: ultrasonic, radiography, and eddy current testing
- Benefits of NDT for early detection of corrosion
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Case studies of NDT applications in the oil and gas industry

Day 4: Advanced Corrosion Management Strategies

- Module 10: Risk-Based Corrosion Management (07:30 – 09:30)
- Risk assessment and prioritizing assets for corrosion management
- Development of risk-based inspection and maintenance plans
- Integrating corrosion management with asset integrity management systems
- Module 11: Integrity Management for Oil and Gas Infrastructure (09:45 – 11:15)
- Managing asset integrity through corrosion monitoring and maintenance
- Life cycle management and the role of corrosion management in asset longevity
- Case studies of successful integrity management programs
- Module 12: Corrosion Control in Offshore and Subsea Environments (11:30 – 01:00)
- Unique challenges of corrosion in offshore and subsea operations
- Specialized corrosion protection techniques for offshore platforms and pipelines
- Case studies of corrosion management in offshore oil fields

Day 5: Managing Corrosion in Projects and Future Trends

- Module 13: Corrosion Management in Oil and Gas Projects (07:30 – 09:30)
- Corrosion management strategies in the design and construction phase
- Best practices for handling corrosion in new oil and gas infrastructure
- Corrosion risk assessment during project execution
- Module 14: Emerging Technologies in Corrosion Control (09:45 – 11:15)
- Advancements in corrosion protection materials and coatings
- Smart coatings and sensors for real-time corrosion monitoring
- The role of AI and digitalization in corrosion management
- Module 15: Sustainable Practices in Corrosion Management (11:30 – 01:00)
- Environmental considerations in corrosion management
- Sustainable materials and eco-friendly corrosion prevention methods
- Future trends in the oil and gas industry’s approach to corrosion control

Certification

Participants will receive a Certificate of Completion in Corrosion Engineering and Corrosion Management for the Oil and Gas Industry, certifying their expertise in corrosion control, monitoring, and management practices specific to the oil and gas sector.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

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