MAWA EVENTS

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

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MATERIALS & CORROSION ENGINEERING FOR THE ONSHORE, OFFSHORE & SUBSEA ENVIRONMENT

"Master materials selection, corrosion management, and engineering solutions for challenging environments in onshore, offshore, and subsea operations."

Schedule

Date	Venue	Fees (Face-to-Face)
21 – 25 Jun 2026	Manama, Bahrain	USD 3495 per delegate

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

Introduction

The harsh and corrosive conditions found in onshore, offshore, and subsea environments require specialized materials and corrosion engineering strategies. This 5-day course delves into materials selection, corrosion types, and preventive measures tailored to these challenging environments. Through a combination of theoretical understanding and practical applications, participants will gain critical knowledge to enhance materials integrity and extend the life cycle of equipment, systems, and infrastructure in corrosive settings.

Objectives

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

- Understand the principles of materials selection for onshore, offshore, and subsea environments
- Recognize the types of corrosion and their impact on materials in extreme environments
- Apply effective corrosion control and prevention techniques in different environments
- Develop strategies for inspecting and maintaining materials in corrosive settings
- Understand the role of coatings, inhibitors, and other corrosion-resistant technologies
- Implement best practices in corrosion management and mitigation in the oil and gas industry

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Why Attend

- Deepen your understanding of materials science and corrosion engineering for extreme environments
- Learn to apply corrosion prevention techniques that prolong the service life of critical infrastructure
- Gain practical knowledge to identify, analyze, and mitigate corrosion risks in onshore, offshore, and subsea operations
- Increase your ability to choose appropriate materials based on environmental and operational factors
- Stay up to date with the latest innovations in corrosion-resistant materials and technologies
- Enhance your problem-solving skills for managing corrosion-related challenges

Target Audience

This program is designed for:

- Materials engineers and corrosion specialists in the oil and gas, petrochemical, and maritime industries
- Maintenance and reliability professionals working in onshore, offshore, or subsea environments
- Engineers responsible for the selection and maintenance of materials in corrosive settings
- Technical personnel involved in corrosion monitoring, testing, and prevention

Individual Benefits

Key competencies that will be developed include:

- Expertise in material selection for corrosion resistance in extreme conditions
- In-depth knowledge of corrosion mechanisms and their effects on different materials
- Practical understanding of corrosion testing methods and monitoring techniques
- The ability to design and implement corrosion management strategies
- Enhanced skills in preventing and mitigating corrosion failures in critical infrastructure

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- A strategic understanding of materials and corrosion management for operational reliability
- The ability to implement effective corrosion control programs, reducing downtime and maintenance costs
- Knowledge of state-of-the-art materials and coatings that extend equipment lifespan
- Proficiency in assessing corrosion risks and choosing the right materials for the job
- A proactive approach to ensuring the safety and integrity of onshore, offshore, and subsea assets

Instructional Methodology

The course follows a blended learning approach combining theory with practical applications:

- Lectures – An introduction to materials, corrosion types, and principles of corrosion engineering
- Case Studies – Real-world examples of corrosion challenges and successful management strategies
- Workshops – Hands-on exercises to assess materials performance and corrosion mitigation techniques
- Group Discussions – Interactive discussions on common industry challenges and solutions
- Tools – Introduction to corrosion testing and monitoring tools used in industry

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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 Materials and Corrosion Principles

- Module 1: Overview of Materials Engineering – 07:30–09:30 ● Introduction to materials science and engineering for extreme environments ● Key factors influencing material performance in onshore, offshore, and subsea settings ● Types of materials used in these environments and their characteristics
- Module 2: Understanding Corrosion – 09:45–11:15 ● Definition and types of corrosion (e.g., galvanic, pitting, stress corrosion cracking) ● Corrosion mechanisms and their impact on materials performance ● Environmental factors contributing to corrosion in different settings
- Module 3: Corrosion Prevention Techniques – 11:30–01:00 ● Corrosion inhibitors, coatings, and cathodic protection methods ● Design considerations for reducing corrosion risks ● Best practices in material selection for corrosion resistance
- Module 4: Workshop – Material Testing and Evaluation – 02:00–03:30 ● Hands-on demonstration of material testing methods (e.g., hardness testing, corrosion resistance tests) ● Practical application of corrosion prevention techniques

Day 2: Corrosion Management in Onshore and Offshore Environments

- Module 1: Materials in Onshore Environments – 07:30–09:30 ● Material selection for onshore operations (e.g., land-based pipelines, refineries) ● Corrosion risks in onshore settings and how to mitigate them ● Maintenance and monitoring strategies for onshore systems
- Module 2: Materials in Offshore Environments – 09:45–11:15 ● Challenges of materials in offshore oil and gas platforms ● Offshore corrosion management techniques and material selection ● The role of coatings and inhibitors in offshore corrosion control
- Module 3: Materials for Subsea Operations – 11:30–01:00 ● Material requirements for subsea pipelines and equipment ● Subsea corrosion risks and the importance of material selection ● Case studies of successful subsea corrosion management
- Module 4: Workshop – Corrosion Risk Assessment – 02:00–03:30 ● Hands-on workshop on assessing corrosion risks in offshore and subsea operations ● Group activity: Developing corrosion management strategies for a subsea project

Day 3: Advanced Corrosion Control and Monitoring Techniques

- Module 1: Advanced Corrosion Control Techniques – 07:30–09:30 ● New advancements in corrosion-resistant materials and coatings ● High-performance alloys and composites in harsh environments ● New trends in corrosion protection technology
- Module 2: Corrosion Monitoring and Testing – 09:45–11:15 ● Corrosion monitoring techniques (e.g., ultrasonic testing, corrosion probes) ● The role of sensors and real-time data in corrosion management ● Hands-on session with corrosion monitoring equipment
- Module 3: Failure Analysis and Case Studies – 11:30–01:00 ● Analyzing and learning from corrosion-related failures in the field ● Case studies of major corrosion incidents and their impact ● Lessons learned and applying them to future projects
- Module 4: Workshop – Developing a Corrosion Management Plan – 02:00–03:30 ● Group exercise: Developing a corrosion management plan for a critical asset ● Identifying failure points and proposing solutions for long-term reliability

Certification

Participants will receive a Certificate of Completion in Materials & Corrosion Engineering for Onshore, Offshore & Subsea Environments, validating their expertise in material selection and corrosion management in these demanding environments.

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.

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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**