MERCURY

Advanced Corrosion Management Training Course

19 – 30 September 2027
Sharm El-Sheikh (Egypt)



Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
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Ref: 15697_321205 **Date:** 19 – 30 September 2027 **Location:** Sharm El-Sheikh (Egypt) **Fees:** 9000 Euro

Introduction:

This Advanced Corrosion Management Solutions training course is designed for professionals seeking an in-depth understanding of corrosion mechanisms and management strategies to enhance the longevity and safety of infrastructure and equipment. Effective corrosion management becomes crucial as industries increasingly rely on complex systems exposed to harsh environments.

In this Advanced Corrosion Management Solutions course, participants will explore advanced techniques and technologies for identifying, analyzing, and mitigating corrosion. They will implement robust solutions to prevent costly damage and maintain operations. They will delve into the latest advancements in corrosion science and practice, equipping you with the skills to address today's most challenging corrosion issues.

In developing corrosion management solutions and strategies, this Advanced Corrosion Management Solutions course offers an approach to structuring a corrosion management system that aligns with best industry practices. Participants will have a solid understanding of formulating a corrosion management plan incorporating advanced corrosion solutions, thereby contributing to their organizations regarding efficiency, cost reduction, and extending the life cycle of assets prone to corrosion.

Participants in this Advanced Corrosion Management Solutions training are guided to tailor these strategies into a coherent corrosion management strategy that harmonizes with their existing systems. Thus, a proactive corrosion management training and action plan ensures the integrity of critical assets.

Targeted Groups:

- Corrosion Engineers and Specialists.
- Maintenance and Reliability Engineers.
- Asset Integrity Managers.
- Plant and Facility Managers.
- Materials Scientists.
- Industrial Safety Professionals.
- Quality Assurance and Control Personnel.
- Research and Development Teams.

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Course Objectives:

At the end of this Advanced Corrosion Management Solutions course, the participants will be able to:

- Understand advanced corrosion mechanisms and their effects on different materials and structures.
- Apply sophisticated diagnostic techniques for accurate corrosion analysis.
- Develop and implement effective corrosion prevention and control strategies tailored to specific environments.
- Perform comprehensive corrosion inspections and accurately interpret inspection results.
- Assess corrosion-related risks and develop mitigation plans to address potential failures.
- Select and apply appropriate materials, coatings, and inhibitors to prevent corrosion.
- Integrate corrosion management practices into asset integrity and maintenance.
- Ensure compliance with industry standards, regulations, and best practices in corrosion management.
- Analyze case studies of corrosion failures to identify lessons learned and improve strategies.
- Enhance decision-making skills related to corrosion management and asset preservation.

Targeted Competencies:

By the end of this Advanced Corrosion Management Solutions training, participants competencies:

- Advanced Corrosion Analysis Techniques.
- Corrosion Prevention and Control Strategies.
- Corrosion Inspection and Monitoring.
- Failure Mode Analysis.
- Materials Selection and Compatibility.
- Corrosion Management Planning.
- Risk Assessment and Mitigation.
- Compliance with Industry Standards and Regulations.

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Course Content:

Unit 1: Introduction to Advanced Corrosion Mechanisms:

- Review basic and advanced corrosion principles.
- Explore stress corrosion cracking and localized corrosion.
- Study environmental impacts on corrosion rates.
- Analyze temperature, pressure, and chemical effects on materials.
- Discuss corrosion in different industrial contexts.

Unit 2: Corrosion Analysis Techniques:

- Learn advanced diagnostic tools and methods.
- Apply electrochemical corrosion assessment techniques.
- Use spectroscopy for detailed analysis of corrosion products.
- Employ microscopy to examine corrosion at a microscopic level.
- Implement non-destructive testing NDT methods for real-time inspection.

Unit 3: Corrosion Prevention Strategies:

- Develop targeted corrosion prevention strategies.
- Apply protective coatings and corrosion inhibitors.
- Design and implement cathodic protection systems.
- Evaluate and optimize prevention techniques for effectiveness.
- Monitor the long-term performance of prevention measures.

Unit 4: Corrosion Control Measures:

- Design corrosion control systems for diverse environments.
- Choose corrosion-resistant materials and alloys.
- Implement protective measures for infrastructure such as pipelines.
- Maintain and monitor control systems for ongoing effectiveness.
- Address and rectify corrosion control failures promptly.

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Unit 5: Corrosion Inspection and Monitoring:

- Conduct regular and specialized corrosion inspections.
- Utilize techniques like ultrasonic testing and radiography.
- Interpret data from inspections to identify issues.
- Develop inspection schedules based on risk and exposure.
- Ensure consistent monitoring and documentation of corrosion status.

Unit 6: Risk Assessment and Management:

- Perform detailed risk assessments for corrosion impacts.
- Develop and implement risk management strategies.
- Create and monitor risk mitigation plans.
- Prioritize maintenance based on risk data.
- Adjust strategies based on ongoing risk assessments.

Unit 7: Materials Selection and Compatibility:

- Select materials based on corrosion resistance and application.
- Assess material compatibility with environmental conditions.
- Consider mechanical properties and expected service life.
- Apply material science knowledge to enhance corrosion resistance.
- Make informed choices for material use and maintenance.

Unit 8: Compliance and Standards:

- Review relevant industry standards and regulations.
- Implement best practices for regulatory compliance.
- Examine case studies of compliance failures and remedies.
- Stay informed about updates to standards and regulations.
- Integrate compliance requirements into corrosion management practices.

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Unit 9: Case Studies and Failure Analysis:

- Analyze case studies of corrosion-related failures.
- Identify root causes and impacts of failures.
- Apply lessons learned to future corrosion management practices.
- Discuss corrective actions taken in case studies.
- Develop strategies to prevent the recurrence of similar issues.

Unit 10: Corrosion Management Planning and Decision-Making:

- Develop and implement comprehensive corrosion management plans.
- Integrate corrosion management with asset management strategies.
- Use data-driven insights for decision-making on maintenance.
- Create strategies for continuous improvement in corrosion management.
- Monitor and adjust plans based on performance and outcomes.