MERCURY

Corrosion Control in Gas, Oil & Water Training Course

30 May – 3 June 2027
Cairo (Egypt)



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Ref: 637_327454 **Date:** 30 May – 3 June 2027 **Location:** Cairo (Egypt) **Fees:** 4000 Euro

Introduction:

This comprehensive course is designed to equip professionals in the gas, oil, and water industries with advanced knowledge and skills in corrosion control. The curriculum covers theoretical foundations, practical applications, and the latest corrosion prevention and management technology. By the end of this training, participants will be well-versed in combating corrosion, which can drastically reduce maintenance costs and extend equipment lifespan.

Understanding and managing corrosion is critical in the gas, oil, and water sectors. This training course addresses the complex challenges posed by corrosion in these industries. Skilled corrosion control plays a significant role in ensuring the durability and integrity of infrastructure, which is fundamental to preventing hazardous incidents, ensuring safety, and optimizing operational efficiency.

Corrosion can result in significant operational disruptions and environmental hazards in the oil and gas sector. Therefore, it is imperative to have dedicated corrosion control programs that ensure asset safety, reliability, and longevity. Emphasizing corrosion control in oil and corrosion control in water systems is a safety and cost-saving strategy.

This course is crucially concerned with metallurgy and corrosion control in oil and gas production. Participants will delve into the properties of different materials, how they affect their susceptibility to corrosion, and the systematic methods used to protect these materials from premature degradation.

Corrosion control encompasses all the technical methods used to prevent or reduce corrosion. This includes material selection, design considerations, protective coatings, corrosion inhibitors, and cathodic protection. The course illuminates these aspects to foster an in-depth understanding of what constitutes efficient corrosion management.

By integrating these components, participants will glean substantial knowledge and skills in corrosion control, qualifying them for certifications and fostering their growth as experts in corrosion engineering.

Targeted Groups:

- Petroleum Engineers
- Welding Engineers
- Process Engineers
- Inspectors and Inspection Supervisors
- Equipment Engineers
- Maintenance Engineers and Planners
- Design Engineers
- Service Company Representatives

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Course Objectives:

After this corrosion control course, attendees will be capable of:

- Exploring the materials of construction used in the oil, gas, and water fields
- Learning about the corrosion theories and mechanisms
- Understanding the typical types of corrosion related to oil, gas, and water fields
- Discovering corrosion control monitoring and inspection methods
- Applying practical methods of controlling corrosion, such as corrosion water control

Targeted Competencies:

- Metallurgy and engineering material properties
- The cost of corrosion damage in industries
- Comprehensive understanding of corrosion mechanisms in oil, gas, and water fields
- Development of core corrosion control and mitigating programs
- Advanced techniques for corrosion monitoring

Course Content:

Unit 1: Construction Material Grades and Principles of Corrosion Engineering:

- Engineering material properties, including metallurgy
- Materials testing destructive testing
- Material identification according to API 5L and ASME code
- Economic impacts of corrosion and defining what corrosion engineering
- Fundamentals of corrosion theory and measurement

Unit 2: Understanding Types of Corrosion:

- Insight into galvanic corrosion
- Identifying localized or pitting corrosion
- Impact of stray currents on corrosion
- Soil corrosion phenomena
- Mechanisms of crevice corrosion
- Exploration of Microbiologically Induced Corrosion MIC

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Unit 3: Further Exploration of Types of Corrosion:

- Wet hydrogen sulfide H2S corrosion mechanisms
- Corrosion Under Insulation CUI
- Challenges with Corrosion Under Support CUS
- Assessing Flow assisted corrosion Erosion Corrosion
- Preventing Cl stress corrosion cracking
- Strategies against Intergranular corrosion

Unit 4: Corrosion Control in Oil, Gas & Water Fields:

- Protective measures through design alteration
- Techniques in active Cathodic protection Sacrificial anode
- Employing cathodic protection Impressed Current
- Implementing passive Protection Coating
- Various types of protective paints
- Utilizing inhibitors as part of corrosion control training

Unit 5: Corrosion Monitoring in Oil, Gas & Water Fields:

- Utilizing thickness measurements with ultrasonic testing
- Radiographic examinations for corrosion detection
- Employing corrosion coupons
- Electronic probes application
- Intelligent pigging systems
- Incorporating Risk-Based Inspection RBI, leading to corrosion control certification and advanced corrosion engineering training