



London TDM

# Mechanical and Electrical Engineering Training Courses

**Course Venue:** United Arab Emirates - Dubai

**Course Date:** From 09 November 2025 To 13 November 2025

**Course Place:** Downtown Dubai

**Course Fees:** 5,000 USD

## Introduction

Corrosion Engineering and Protection Systems is an essential course designed to equip professionals with knowledge and tools to effectively manage and mitigate corrosion in various industrial settings. This comprehensive program combines theoretical understanding and practical application, providing insights into corrosion mechanisms, assessment techniques, and implementation of protection strategies.

- Understand the fundamentals of corrosion and its implications on industries.
- Identify different types of corrosion and their characteristics.
- Explore various corrosion protection methods and technologies.
- Develop skills to design and implement effective corrosion management strategies.
- Enhance problem-solving abilities in addressing corrosion-related challenges.

## Course Outlines

### Day 1: Fundamentals of Corrosion

- Introduction to corrosion and its economic and safety impacts.
- Basic electrochemistry of corrosion processes.
- Different types of corrosion: Uniform, pitting, crevice, intergranular, etc.
- Factors influencing corrosion rates and severity.
- Introduction to corrosion testing and evaluation methods.

### Day 2: Corrosion Assessment Techniques

- Visual inspection and non-destructive testing (NDT) methods.
- Advanced techniques: Electrochemical impedance spectroscopy, linear polarization resistance.
- Use of corrosion coupons and probes.
- Data collection, analysis, and interpretation.
- Case studies: Successful and failed corrosion assessments.

### Day 3: Corrosion Prevention and Control Strategies

- Materials selection and design considerations to minimize corrosion.
- Coating types and applications for corrosion protection.
- Cathodic and anodic protection systems.
- Environmental modification and inhibitors for corrosion control.
- Developing and implementing a corrosion control plan.

### Day 4: Industry-Specific Corrosion Management

- Challenges and solutions in the oil and gas industry.
- Corrosion issues in marine environments and protection strategies.
- Corrosion in the automotive and aerospace industries.
- Infrastructure and civil engineering projects: Managing corrosion.
- Developing industry-specific best practices and protocols.

### Day 5: Future Trends and Innovation in Corrosion Protection

- Recent advancements in corrosion-resistant materials.
- Smart coatings and self-healing technologies.
- Nanotechnology applications in corrosion prevention.
- Role of digital twins and predictive maintenance in corrosion management.
- Future challenges and research opportunities in corrosion engineering.