

Training Title

**CORROSION AWARENESS CONTROL AND MONITORING**

Training Duration

5 days

Training Venue and Dates

REF#	Corrosion Awareness Control And		19 - 23 January,		
WC031	Monitoring	5	2020	\$4,500	Dubai, UAE

In any of the 5 star hotels. The exact venue will be informed once finalized.

Training Fees

- 4,500 US\$ per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Buffet Lunch.

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING OVERVIEW

TRAINING OBJECTIVES

To understand the fundamentals of material failure at normal and plant operating condition and why different material behave differently - strategic maintenance methods  
To understand how plant aging can cause catastrophic failures and the methodology of inspection

Importance of monitoring and modern methods

Case studies from plant failures and failure analysis to reinforce understanding of theory

To understand corrosion in other structural materials as concrete fiberglass and nonmetals

WHO SHOULD ATTEND?

Candidates who intends taking certification- For those interested in learning fitness for service of plant and equipment- for Managers and staff interested in health safety and environment of unintended plant failure-for planning Managers interested in MRO and plant maintenance and know all about inspection and monitoring

This five day intensive Short Course is intended for Engineers, Technicians, Managers, Supervisors, Salespersons, Inspectors, Anyone needing a basic understanding of corrosion.

TRAINING METHODOLOGY:

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will

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start by raising the most relevant questions, and motivate everybody find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course. Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work& Practical Exercises
- 20% Videos& General Discussions

## DAILY OUTLINE

### **Corrosion**

The need for corrosion awareness

The cost of corrosion

Why metals and materials deteriorate

The impact of environment

The school textbook definition of corrosion

The modern definition of corrosion

The atomic theory

Setting up a corrosion cell in the lab.

Why different materials react in different ways and rates

More definitions of corrosion – spontaneous, unseen, irreversible

The mistaken common notion, anode, cathode

Polarization – the slowing down process

Tafel's slope – a clue to control corrosion

Understanding corrosion – forms – causes –soil, water ,bacteria, atmosphere, gases and vapours, and steam-operating conditions as pressure, temperature, velocity, stress, product input variations

Avoidance and control of each – explained through

Case studies.

Four-way method of controlling corrosion

What is cathodic protection – how it works – principles

Typical examples of CP

The galvanic and impressed.

The components

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**Coating – types**

- limitations
- failure and detection
- how it works with CP

**Inhibitors - types**

- limitations
- case studies

**Material selection and design**

- cost of overdesign
- new materials
- S Steel,. High Ni alloys, fiber glass

**Estimating corrosion loss**

- Faraday's law
- Weight loss, coupon
- ER
- Polarization techniques
- NDT – Eddy – UT, PT, RT
- Microscopy / lab techniques

**Corrosion monitoring - coupon**

- Pig
- Endoscopies
- Acoustic
- CP
- Coating failure

**Corrosion of - SS**

- Concrete
- Fiberglass and plastics
- Bacterial
- Non ferrous Al, Cu alloy

**High temp. Corrosion.**

**NOTE:**

**Pre & Post Tests will be conducted**

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Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.

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