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COURSE BROCHURE

# Advanced Oil and Gas Corrosion Management Systems Training Course

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Registered in the United Kingdom and Saudi Arabia

# Advanced Oil and Gas Corrosion Management Systems Training Course

Oil and Gas Corrosion Management Systems is a 2-week training course for corrosion engineers, integrity managers and inspection leads, built around a corrosion management system framework that ties threats, barriers, monitoring and performance indicators into one accountable cycle. Ageing pipelines, sour production and leaner maintenance budgets mean corrosion now drives a large share of containment losses and unplanned deferment. Jupiter Prime Training delivers this Oil and Gas Corrosion Management Systems course for asset integrity leaders.

## Why Oil and Gas Corrosion Management Systems Matters Now

Three pressures shape corrosion work today. Fields produce more water, carbon dioxide and hydrogen sulphide as they mature, so internal attack accelerates in flowlines, pipelines and process plant. Boards and insurers expect integrity decisions backed by evidence rather than inspection habits. Specialists are scarce, so corrosion knowledge must sit in systems, not in a few individuals. Operators with a working corrosion management system spend chemicals, coatings and inspection where risk is highest; those without one react to leaks. The course draws on the plan-do-check-act cycle, barrier thinking and established cathodic protection survey practice.

## Who Gains Most from Oil and Gas Corrosion Management Systems

- Engineers who own corrosion control strategy for pipelines, flowlines and process facilities
- Leaders accountable for asset integrity budgets, risk registers and assurance reporting
- Leads who plan inspection campaigns and interpret wall-loss data
- Specialists who select and dose corrosion inhibitors and biocides
- Engineers who design, survey and maintain cathodic protection systems

Asset integrity departments gain most when their corrosion, inspection and production chemistry specialists attend together and build one shared system.

## Oil and Gas Corrosion Management Systems Capabilities

Participants leave able to turn scattered corrosion activities into a managed system with clear threats, owned barriers and measured performance.

- Assess internal and external corrosion threats for each asset system — corrosion risk ranking
- Design a corrosion control matrix linking threats to barriers and owners — integrity leadership approval
- Specify monitoring methods and locations for each threat — inspection and chemistry budgets
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Calculate inhibitor availability and cathodic protection adequacy — barrier performance reviews
- Build leading and lagging corrosion performance indicators — monthly integrity reporting
- Communicate corrosion risk and spending priorities — executives, partners and auditors

## Key Oil and Gas Corrosion Management Systems Terms

- Corrosion Management System — the policies, processes, roles and records an operator uses to control corrosion across its assets.
- Corrosion Threat — a credible mechanism, such as carbon dioxide or microbial attack, that can damage a specific asset system.
- Corrosion Control Matrix — a table linking each threat to its barriers, monitoring, owners and performance targets.
- Inhibitor Availability — the share of time an inhibitor is injected at or above the required dose.
- Cathodic Protection — an electrochemical method that protects buried or submerged steel by making it the cathode of a cell.
- Leading Indicator — a measure of barrier activity that warns of rising corrosion before damage appears.

## Oil and Gas Corrosion Management Systems Day by Day

### Day 1: Corrosion as an Integrity Business Risk

- Cost of Corrosion in Upstream and Midstream Assets — Business Case
- Containment Loss Case Studies — Pipelines and Production Facilities
- Plan-Do-Check-Act Cycle for Corrosion — System Architecture
- Roles and Accountabilities — Corrosion, Inspection, Chemistry and Operations
- Maturity Assessment of Current Practice — Gap Identification

### Day 2: Internal Corrosion Threats

- Carbon Dioxide Sweet Corrosion — Prediction Models and Rate Drivers
- Hydrogen Sulphide Sour Corrosion — Material Selection Consequences
- Microbially Influenced Corrosion — Sampling and Biocide Strategy
- Oxygen Ingress in Water Injection — Deaeration and Scavenger Control
- Under-Deposit and Erosion-Corrosion — Sand and Solids Management

### Day 3: External Corrosion Threats

- Atmospheric Corrosion of Offshore and Coastal Plant — Coating Systems
- Corrosion Under Insulation — Susceptibility Screening and Removal Plans
- Buried Pipeline Coating Degradation — Survey Selection
- Stray Current and Interference — Detection and Mitigation
- Splash Zone and Riser Corrosion — Repair and Protection Options

## Day 4: Corrosion Monitoring Methods

- Weight-Loss Coupons and Electrical Resistance Probes — Rate Measurement
- Linear Polarisation Resistance and Online Sensors — Real-Time Trends
- Water Chemistry and Iron Count Sampling — Indirect Indicators
- Monitoring Location Selection — Dead Legs, Low Points and Bends
- Data Integration — Linking Monitoring, Inspection and Process Data

## Day 5: Chemical Inhibition

- Inhibitor Selection and Laboratory Testing — Field Fluid Compatibility
- Continuous and Batch Treatment — Dosage Calculation
- Inhibitor Availability Tracking — Pump Uptime and Injection Records
- Residual Analysis — Confirming Effective Concentration Downstream
- Chemical Contracts and Supplier Performance — Cost and Reliability

## Day 6: Cathodic Protection

- Cathodic Protection Principles — Sacrificial Anode and Impressed Current Systems
- Protection Criteria and Potential Surveys — Adequacy Assessment
- Close Interval and Direct Current Voltage Gradient Surveys — Coating Defects
- Tank Bottom and Well Casing Protection — Design Considerations
- Rectifier Monitoring and Anode Life — Maintenance Planning

## Day 7: Corrosion Risk Ranking

- Threat Screening by Asset System — Credible Mechanism Lists
- Likelihood Estimation From Rates and Remaining Wall — Probability Scoring
- Consequence Categories — Safety, Environment and Production
- Risk Matrix Calibration — Ranking Pipelines and Facilities
- Risk-Based Inspection and Mitigation Intervals — Resource Allocation

## Day 8: Building the Corrosion Control Matrix

- Barrier Definition for Each Threat — Chemical, Coating, Material and Process
- Barrier Ownership and Task Assignment — Maintenance Management System Links
- Operating Limits for Corrosion Barriers — Water Cut, Velocity and Temperature
- Management of Change Triggers — Process and Fluid Changes
- Corrosion Records and Data Standards — Audit Trail Quality

## Day 9: Performance Indicators and Assurance

- Leading Corrosion Indicators — Inhibitor Availability and Survey Completion
- Lagging Corrosion Indicators — Leaks, Repairs and Wall-Loss Findings
- Corrosion Dashboard Design — Monthly Integrity Reporting
- Audit and Self-Assessment Protocols — System Effectiveness Checks
- Budget Justification — Linking Spend to Risk Reduction

## Day 10: Practising the Corrosion Management System Framework

- Threat Register Build — Applying Internal and External Threat Screening
- Monitoring Plan Draft — Applying Probe, Coupon and Survey Selection
- Risk Ranking Exercise — Applying Likelihood and Consequence Scoring
- Indicator Set Selection — Applying Leading and Lagging Measures
- Corrosion Management System Framework — Completing Matrix, Indicators and Review Cycle

## Applying Oil and Gas Corrosion Management Systems After the Course

- Draft a corrosion control matrix for one pipeline system, naming every threat, barrier, owner and monitoring point, and review it with operations.
- Introduce inhibitor availability and cathodic protection survey completion as monthly leading indicators on the integrity dashboard.

## Oil and Gas Corrosion Management Systems Questions FAQ

### What is an oil and gas corrosion management system and why does it matter now?

It is the structured set of threats, barriers, monitoring, roles and indicators an operator uses to control corrosion. It matters now because maturing fields grow more corrosive while budgets tighten and boards demand evidence that integrity risk is under control.

### Which roles gain most from oil and gas corrosion management systems training?

Corrosion engineers, integrity managers and inspection leads gain most. You benefit if you own corrosion strategy, set chemical or cathodic protection plans, plan inspections or report integrity performance to leadership.

### How does an oil and gas corrosion management systems course differ from a corrosion science course?

It focuses on running corrosion control as a managed system rather than on electrochemistry alone. A corrosion science course explains mechanisms, while this one builds threat registers, barrier matrices, risk ranking and performance indicators.

### What do you bring back from oil and gas corrosion management systems training?

You bring back a corrosion management system framework for your assets. It includes a threat register, a corrosion control matrix, a monitoring plan, risk rankings and a set of leading and lagging indicators.

## Oil and Gas Corrosion Management Systems: The Way Forward

The corrosion management system framework first informs where next year's chemical, coating and inspection budget is spent. Corrosion engineers, integrity managers and operations supervisors use it together in monthly integrity reviews. After its first use, revisit the threat register whenever water cut, sour gas content or injection water source changes, since each shift alters the barriers needed.