COURSE OVERVIEW FE0085
Field Corrosion Control

Course Title
Field Corrosion Control

Course Date/Venue
Session 1: May 26-30, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
Session 2: November 16-20, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
FE0085

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and highly-interactive course includes various practical sessions and exercises. Theory learned will be applied using our state-of-the-art simulators.

This course is designed to provide participants with an advanced overview of Oilfield Corrosion Monitoring & Control. It covers the importance of corrosion control in the oil and gas industry; the forms of corrosion in oilfield processes and electrochemical principles of corrosion; the advanced techniques in corrosion monitoring; the KOC integrity management standards and specific requirements for corrosion monitoring in oil, gas and water systems; the laboratory testing parameters in corrosion monitoring; the corrosion control options in oil, gas and water systems; the evaluation of corrosion control programs; formulating guidelines for corrosion monitoring and control; and the chemical treatment programs.

During this interactive course, participants will learn the field implementation of corrosion monitoring projects; the interpretation of laboratory corrosion monitoring results; the criteria for selection and evaluation of corrosion inhibitors; the design and supervision of biocide treatments; the advanced corrosion threat management; developing training programs and coaching monitoring techniques and data interpretation on corrosion control; and the future trends and innovations in corrosion control.

Course Objectives

At the end of this course, the Trainee will be able to:-

- Apply and gain an advanced knowledge on oilfield corrosion monitoring and control
- List and explain the forms of corrosion encountered in oilfield processes
- Explain the techniques and principles deployed in oilfield corrosion monitoring
- List and explain the various corrosion control options in oil, gas, water and utility systems
- List and explain the various laboratory testing parameters conducted as part of corrosion monitoring
- Explain the requirements of KOC integrity management standards for corrosion monitoring and control in oil, gas and water systems
- Formulate guidelines and evaluate procedures for corrosion monitoring and control (according to KOC and international standards)
- Review laboratory corrosion monitoring results (including microbiological enumeration) and verify accuracy of data in order to evaluate corrosion potential
- Evaluate and propose chemical/laboratory corrosion control options and collaborate with operations team to resolve corrosion related issues
- Plan, supervise and evaluate field corrosion monitoring and control projects
- Assess the suitability and field optimisation of corrosion inhibitor chemical dosage for different oil, gas and water processes
- Design the treatment and supervise shock dosing of biocide chemical batches
- Coach others on how to monitor and control corrosion threats in oil, gas, utility and water systems
- Discuss the importance of corrosion control in the oil and gas industry
- Recognize the forms of corrosion in oilfield processes comprising of uniform corrosion, pitting corrosion, galvanic corrosion, crevice corrosion, erosion-corrosion and stress corrosion cracking
- Apply the electrochemical principles of corrosion as well as advanced techniques in corrosion monitoring
- Implement KOC integrity management standards and specific requirements for corrosion monitoring in oil, gas and water systems
- Explain laboratory testing parameters in corrosion monitoring and corrosion control options in oil, gas and water systems
- Evaluate corrosion control programs covering key performance indicators (KPIs), data analysis and interpretation and root cause analysis of failures
- Develop guidelines for corrosion monitoring and control as well as chemical treatment programs
- Implement planning and supervising field activities of corrosion monitoring projects
- Review and interpret laboratory corrosion monitoring results and evaluate criteria for selecting corrosion inhibitor
- Carryout design and supervision of biocide treatments and assess advanced corrosion threat management
- Develop training programs and carryout coaching monitoring techniques and data interpretation on corrosion control
- Discuss future trends and innovations in corrosion control

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an advanced overview of all significant aspects and considerations of oilfield corrosion monitoring and control for corrosion engineers, maintenance engineers and laboratory technicians who are directly involved in the prevention, monitoring, and control of corrosion in oilfield environments.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Fee

US$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations:-

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- The International Accreditors for Continuing Education and Training (IACET - USA)

  Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

  Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

  Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Mr. George Poulos, MBA, MSc, BSc, CEng, is a **Senior Corrosion & Welding Engineer** with over **45 years** of extensive experience within the **Oil & Gas**, **Petrochemical, Refinery**, **Construction**, **Aircraft & Shipbuilding** Industry. His wide experiences covers in the areas of **Metallurgy**, **Corrosion & Prevention** of **Failures**, **Material Selection & Properties**, **Metallurgy** Techniques, **Metallurgical** Failure Analysis & Prevention, **Oilfield Corrosion Monitoring & Control**, **Corrosion** Fabrication & Inspection, **Fabrication** & **Repair**, **Corrosion** Prevention, **Corrosion** Engineering, **Corrosion Control**, **Corrosion Inhibition**, **Corrosion** Management in Process Operations, **Corrosion** & Prevention of Failures, **Material** Selection, **Cathodic Protection** Systems, **Welding** & **Cutting**, **Welding** Inspection, **Welding** & **Machine** Techniques, **TIG** & **Arc Welding**, **Shielded Metal Arc Welding**, **Gas Tungsten** & **Gas Metal Arc Welding**, **Welding** Procedure Specifications & Qualifications, **Aluminium Welding**, **Hot & Cold Tapping** Techniques, **Hot Work-Safety**, **SMAW**, **GTAW**, **Welding** Techniques, **Pipeline Welding** Practices, **Welding** Engineering, **Welding** Fatigue & Fracture Mechanics, **Welding Inspection Technology**, **Welding Safety**, **Welding** Defects Analysis, **Welding Technology**, **Welding Problems**, **Welding & Non Destructive** Testing,. Further, he is also well-versed in **Hot Rolling** Process, **Hot Strip Mill**, **Mill** Operations, **Roll Mill**, **Steel Making** Process, **Steel** Manufacturing, **Electric Arc Furnace** (**EAF**), **Steel Forging**, **Steel** Manufacturing & Process Troubleshooting, **Slit Rolling**, **Carbon Steel Pipe** Wall Thickness & Grade Selection, **Ferro-Alloys**, **Steel Metallurgy**, **Steel** Structure Welding, **Steelmaking** Slag, **Steel** Making Application, **Heat Treatment** & **Prevention Techniques**, **Corrosion** Fabrication & Inspection and **Post Weld Heat Treatment**.

During his career life, Mr. Poulos has gained his practical and field experience through his various significant positions and dedication as the **Chief Executive**, **Head of Technical Studies**, **Manager**, **Senior Consultant**, **Lead Welding Engineer**, **Senior Welding Engineer**, **Design Engineer**, **Sales Engineer**, **Author**, **Welding Instructor**, **Visiting Lecturer** and **Technical Proposal Research Evaluator** from various international companies such as Greek Welding Institute, Hellenic Quality Forum and International Construction Companies such as Shipbuilding, Aircraft Industry and Oil and Gas Industry.

Mr. Poulos is a **Registered Chartered Engineer** and has a **Master's** degree in **Naval Architecture**, a **Bachelor's** degree in **Welding Engineering** and a Master of Business Administration (**MBA**) from the **Sunderland University**, **Aston University** and **Open University**, **UK**, respectively. Further, he is a **Certified Trainer/Instructor**, an active Member of Chartered Quality Institute (**CQI**), The British Welding Institute (**TWI**), The Royal Institution of Naval Architects (**RINA**) and American Welding Society (**AWS**), a Registered **EWF/IW** (European Welding Federation-International Welding Institute W/E) and an **IRCA** Accredited External Quality Systems Auditor through BVQI. He is an **Author** of Technical Book dealing with Protection/Health/Safety in the Welding/Cutting domain and delivered various trainings, seminars, conferences, workshops and courses globally.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 - 0800	*Registration & Coffee*
0800 - 0815	*Welcome & Introduction*
0815 - 0830	***PRE-TEST***
0830 - 0930	***Introduction to Oilfield Corrosion*** *Overview of Corrosion in the Oil and Gas Industry • Key Terminology and Basic Principles • Importance of Corrosion Control*
0930 - 0945	*Break*
0945 - 1030	***Forms of Corrosion in Oilfield Processes*** *Uniform Corrosion • Pitting Corrosion • Galvanic Corrosion • Crevice Corrosion • Erosion-Corrosion • Stress Corrosion Cracking*
1030 - 1130	***Electrochemical Principles of Corrosion*** *Corrosion Cell Components: Anode, Cathode, Electrolyte and Metallic Path • Electrochemical Reactions and Potentials • Thermodynamics and Kinetics of Corrosion Processes*
1130 - 1230	***Advanced Techniques in Corrosion Monitoring*** *Electrochemical Impedance Spectroscopy (EIS) • Linear Polarization Resistance (LPR) • Electrochemical Noise (EN) • Hydrogen Permeation Monitoring • Corrosion Rate Measurements and Interpretation*
1230 - 1245	*Break*
1245 - 1330	***KOC Integrity Management Standards for Corrosion Monitoring*** *Overview of KOC Standards and Guidelines • Specific Requirements for Monitoring in Oil, Gas and Water Systems • Compliance and Audit Processes*
1330 - 1420	***Laboratory Testing Parameters in Corrosion Monitoring*** *Corrosion Rate Measurement Techniques • Water Chemistry Analysis • Microbiological Analysis (MIC Detection and Enumeration) • Scale and Deposit Analysis • Material Testing and Failure Analysis*
1420 - 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day One*

Day 2

0730 - 0830	***Corrosion Control Options in Oil, Gas & Water Systems*** *Material Selection and Coatings • Chemical Treatment: Inhibitors, Scavengers, and Biocides*
0830 - 0930	***Corrosion Control Options in Oil, Gas & Water Systems (cont'd)*** *Cathodic Protection Systems • Design Modifications and Operational Practices*
0930 - 0945	*Break*
0945 - 1130	***Evaluation of Corrosion Control Programs*** *Key Performance Indicators (KPIs) • Data Analysis and Interpretation*
1130 - 1230	***Evaluation of Corrosion Control Programs (cont'd)*** *Root Cause Analysis of Failures • Case Studies of Successful Corrosion Control Programs*
1230 - 1245	*Break*

1245 - 1330	***Formulating Guidelines for Corrosion Monitoring & Control*** *Developing Standard Operating Procedures (SOPs) • Best Practices in Monitoring and Control*
1330 - 1420	***Formulating Guidelines for Corrosion Monitoring & Control (cont'd)*** *Alignment with International Standards (NACE, ISO, API)*
1420 - 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Two*

Day 3

0730 - 0830	***Chemical Treatment Programs: Dosage & Optimization*** *Selection of Corrosion inhibitors and their Mechanisms • Dosage Calculations and Optimization Strategies*
0830 - 0930	***Chemical Treatment Programs: Dosage & Optimization (cont'd)*** *Shock Dosing of Biocides: Planning and Execution • Monitoring Effectiveness and Adjusting Treatment Plans*
0930 - 0945	*Break*
0945 - 1130	***Field Implementation of Corrosion Monitoring Projects*** *Planning and Supervising Field Activities • Data Collection Methodologies*
1130 - 1230	***Field Implementation of Corrosion Monitoring Projects (cont'd)*** *Use of Corrosion Monitoring Equipment in the Field • Troubleshooting and Resolving Field Issues*
1230 - 1245	*Break*
1245 - 1330	***Reviewing Laboratory Corrosion Monitoring Results*** *Data Quality Control and Verification • Interpretation of Laboratory Results*
1330 - 1420	***Reviewing Laboratory Corrosion Monitoring Results (cont'd)*** *Identifying Potential Corrosion Threats • Reporting and Documentation*
1420 - 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Two*

Day 4

0730 - 0830	***Case Studies in Oilfield Corrosion Control*** *Detailed Analysis of Real-World Corrosion Challenges and Solutions • Lessons Learned and Best Practices*
0830 - 0930	***Case Studies in Oilfield Corrosion Control (cont'd)*** *Success Stories and Critical Failures*
0930 - 0945	*Break*
0945 - 1130	***Corrosion Inhibitor Selection & Evaluation*** *Criteria for Selecting Corrosion Inhibitors • Laboratory Screening and Field Testing •*
1130 - 1230	***Corrosion Inhibitor Selection & Evaluation (cont'd)*** *Compatibility with System Materials and Fluids •Economic and Environmental Considerations*

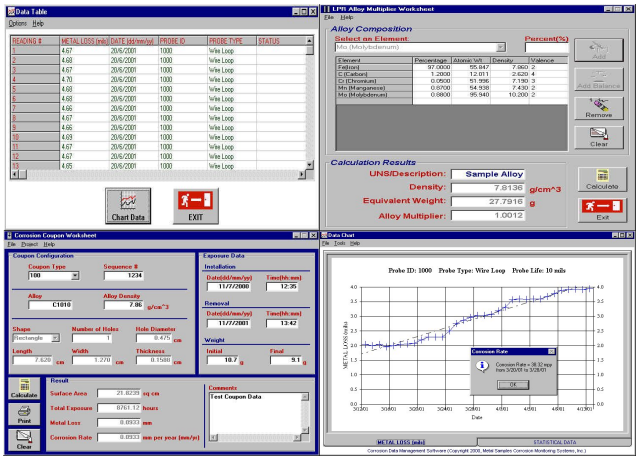
1230 - 1245	*Break*
1245 - 1330	***Design & Supervision of Biocide Treatments*** *Understanding Microbiologically Influenced Corrosion (MIC) • Selection and Application of Biocides •*
1330 - 1420	***Design & Supervision of Biocide Treatments (cont'd)*** *Shock Dosing Techniques and Safety Considerations • Monitoring and Evaluation of Biocide Effectiveness*
1420 - 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Two*

Day 5

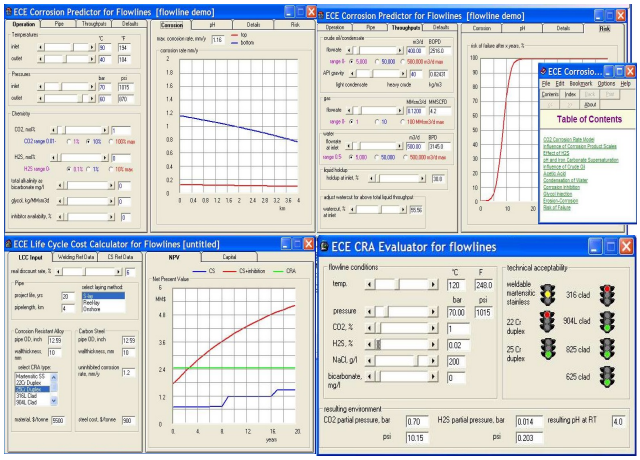
0730 - 0830	***Advanced Corrosion Threat Management*** *Identifying and Assessing High-Risk Areas • Risk-Based Inspection (RBI) Methodologies*
0830 - 0930	***Advanced Corrosion Threat Management (cont'd)*** *Mitigation Strategies for Complex Corrosion Issues • Integration with Asset Integrity Management Systems*
0930 - 0945	*Break*
0945 - 1130	***Coaching & Training on Corrosion Control*** *Developing Training Programs for Staff • Coaching on Monitoring Techniques and Data Interpretation*
1130 - 1230	***Coaching & Training on Corrosion Control (cont'd)*** *Promoting a Culture of Proactive Corrosion Management • Continuous Improvement and Learning*
1230 - 1245	*Break*
1245 - 1330	***Future Trends & Innovations in Corrosion Control*** *Emerging Technologies in Corrosion Monitoring • New Materials and Coatings •*
1330 - 1345	***Future Trends & Innovations in Corrosion Control (cont'd)*** *Advances in Chemical Treatment Solutions • Digital Transformation and Data Analytics in Corrosion Management*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulator (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the simulators "Corrosion Data Management Software (CDMS)" and "Electronic Corrosion Engineer (ECE®) 5".



Corrosion Data Management Software (CDMS)



Electronic Corrosion Engineer (ECE®) 5

Course Coordinator

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