COURSE OVERVIEW FE0250
Corrosion

Course Title
Corrosion

Course Date/Venues
July 06-10, 2025/Boardroom 1, Elite Byblos Hotel, Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
FE0250

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 learnt will be applied using our state-of-the-art simulators.

The aim of this course is to provide sufficient information for engineers and managers to identify and apply corrosion control and material selection procedures to overcome corrosion issues. An in-depth understanding of corrosion is not required to effectively prevent untoward corrosion in 80% of problem areas.

Course participants will have a high quality and in-depth understanding of the corrosion monitoring methods available. The advantages and limitations of each method are detailed and the methods of analysis to convert raw data to useful information are included.

Further, the course will also cover the characteristics of external and internal corrosion; the various forms of corrosions; the designs and selection of material related to corrosion control; the key aspects of atmospheric corrosion and its prevention by coatings; the components of corrosion, coating and lining of hydrocarbon storage tanks; the elements of buried and underwater corrosion and its prevention by coating and cathodic protection; and the cathodic protection on buried and above-ground storage tanks.

During this interactive course, participants will learn the corrosion of reinforced concrete and its prevention using additives, coatings and cathodic protection; the effects of corrosion in process pipelines and its prevention using inhibitors and biocides; the methods to measure and monitor corrosion; the chemical tests in fluids, analyze coating, application and quality control; the cathodic protection application and corrosion management strategies; the risk assessments, inspection strategies, associated failure analysis, microbiological corrosion assessments and the efficiency of cathodic protection.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an in-depth knowledge on corrosion management and material selection in process operations
- Recognize the characteristics of external and internal corrosion and the various forms of corrosions and determine the designs and selection of material related to corrosion control
- Distinguish the key aspects of atmospheric corrosion and its prevention by coatings and discuss the components of corrosion, coating and lining of hydrocarbon storage tanks as well as the elements of buried and underwater corrosion and its prevention by coating and cathodic protection
- Carryout cathodic protection on buried and above-ground storage tanks
- Discuss the corrosion of reinforced concrete and its prevention using additives, coatings and cathodic protection
- Analyze the effects of corrosion in process pipelines and its prevention using inhibitors and biocides
- Carryout methods to measure and monitor corrosion, perform chemical tests in fluids, analyze coating, application and quality control, discuss cathodic protection application and corrosion management strategies
- Execute risk assessments, inspection strategies, associated failure analysis, microbiological corrosion assessments as well as measure the efficiency of cathodic protection

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

Inspection and corrosion engineers will appreciate the frank discussion of the competing methods available in this course. Senior engineers and managers will gain by developing their interpretive skills in data analysis. Further, this course is ideal for all engineers and other technical staff whose responsibilities include the reduction of corrosion either at the design stage or during operation of the facility. Managers in particular will benefit by increasing their awareness of the options available to them.

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:-

- 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.

- 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.

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.

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 & Metallurgical Engineer** with over **45 years** of extensive experience within the **Oil & Gas, Petrochemical, Refinery, Construction, Aircraft & Shipbuilding** Industry. His wide experiences cover in the areas of **Corrosion in Urea & Ammonia Plants,** Corrosion and **Metallurgy**, Analysis & Prevention, **Corrosion** Fabrication & Inspection, **Fabrication** & **Repair**, **Corrosion** Prevention, **Corrosion** Engineering, **Corrosion Control**, **Corrosion Inhibition**, **Corrosion** Management in Process Operations, **Corrosion** & Prevention of Failures, **Pressure Vessels**, **Piping Inspection**, **Risk-Based Inspection**, **Fitness-for-Service** (**FFS**), **Metallurgical** Failure, **Metallurgy & Metallurgical Processes, Metallurgical** Lab, **Material** Selection, **Cathodic Protection** Systems, **Steel Metallurgy**, **Steel** Structure Welding, **Steelmaking** Slag, **Steel** Making Application, **Steel Making** Process, **Steel** Manufacturing, **Steel Forging**, **Steel** Manufacturing & Process Troubleshooting, **Hot Rolling** Process, **Hot Strip Mill**, **Mill** Operations, **Roll Mill**, **Electric Arc Furnace** (**EAF**), **Slit Rolling**, **Carbon Steel Pipe** Wall Thickness & Grade Selection, **Ferro-Alloys**, **Heat Treatment** & **Prevention Techniques** and **Post Weld Heat Treatment**. Further, he is also well-versed in **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 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 and **Metallurgy Techniques**.

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.

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.

Accommodation

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

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: Sunday, 06th of July 2025

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***What is Corrosion (External and Internal Corrosion)***
0930 – 0945	*Break*
0945 – 1100	***Forms of Corrosion***
1100 – 1215	***Design & Material Selection Related to Corrosion Control***
1215 – 1230	*Break*
1230 – 1420	***Atmospheric Corrosion and its Prevention by Coatings***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: Monday, 07th of July 2025

0730 – 0930	***Corrosion, Coating and Lining of Hydrocarbon Storage Tanks***
0930 – 0945	*Break*
0945 – 1100	***Buried and Underwater Corrosion and its Prevention by Coatings and Cathodic Protection***
1100 – 1215	***Cathodic Protection of Buried and Above-Ground Storage Tanks***
1215 – 1230	*Break*
1230 – 1420	***Corrosion of Reinforced Concrete and its Prevention using Additives, Coatings and Cathodic Protection***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: Tuesday, 08th of July 2025

0730 – 0930	***Corrosion in Process Pipelines and its Prevention using Inhibitors and Biocides***
0930 – 0945	*Break*
0945 – 1100	***Methods of Measurement of Corrosion***
1100 – 1215	***Advanced Methods of Corrosion Monitoring***
1215 – 1230	*Break*
1230 – 1420	***Associated Chemical Testing of Fluids***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4: Wednesday, 09th of July 2025

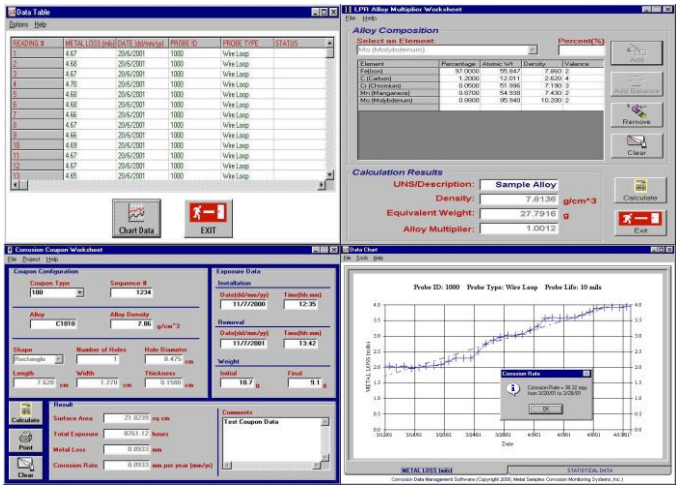
0730 – 0930	***Linking Inspection and Corrosion Monitoring***
0930 – 0945	*Break*
0945 – 1100	***Coating, Application and Quality Control***
1100 – 1215	***Cathodic Protection Application***
1215 – 1230	*Break*
1230 – 1420	***Corrosion Management Strategies***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5: Thursday, 10th of July 2025

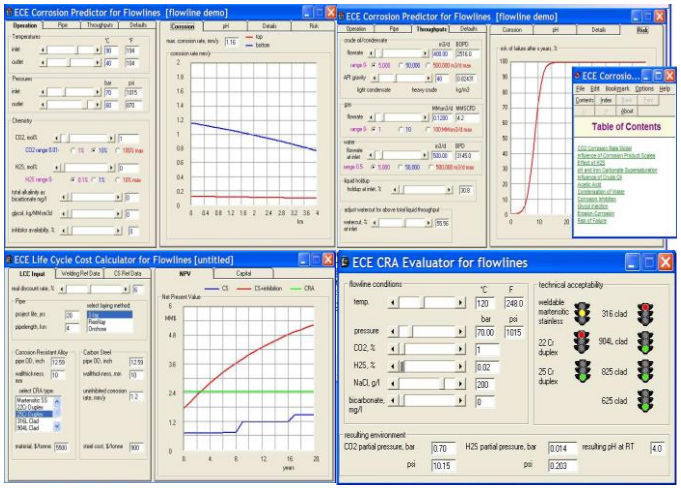
0730 – 0930	***Corrosion Risk Assessment and Inspection Strategies***
0930 – 0945	*Break*
0945 – 1100	***Associated Failure Analysis***
1100 – 1215	***Microbiological Corrosion Assessments***
1215 – 1230	*Break*
1230 – 1345	***Measuring the Effectiveness of Cathodic Protection***
1345 – 1400	***Course Conclusion***
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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