

COURSE OVERVIEW FE0631

Material Certification and Inspection Levels

Course Title

Material Certification and Inspection Levels

Course Date/Venue

Session 1: April 07-11, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Session 2: September 28-October 02, 2025/ Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE



Course Reference

FE0631



Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



This hands-on, highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

Engineering materials are the cornerstone of oil and gas facilities and process plants. Material quality has a direct effect on the mechanical integrity, safety and cost effective operation of the petroleum facility.



Material acceptability is controlled by relevant codes and standards. Proper inspection procedures shall be followed before accepting the materials by the engineers.



This course is designed to provide participants with an up-to-date overview of the engineering materials and their inspection process. It covers materials technology applied in the oil and gas industry that includes fabrication methods, technical specifications, testing, inspection and preservation techniques; the types of materials used in oil and gas industry; the physical, chemical and mechanical properties of materials; classifying and specifying material as well as identifying the ferrous and non-ferrous metals, plastics and composite materials; the material processing, heat treatment, material selection, metallurgy, NDT techniques and materials fabrication/construction techniques; the material defects and material corrosion mechanisms; and material requisition as per the standards and code requirements.

At the completion of this course, participants will be able to illustrate material management cycle, material preservation technology and material inspection; inspect and test material; distinguish the acceptance/rejection criteria during the inspection process; verify material certificates availability as per purchase order for materials received; complete “Certificates Receipt Reports” as per verification results; communicate with user departments on resolving material inspection and certification issues; complete “Certificates Issue Reports” as per user department requests for materials; perform technical report writing; complete “Transfer To Disposal” forms for user consideration; and ensure that all rejected materials are segregated and kept in quarantine or disposal area in conjunction with warehouse supervisor.

Course Objectives

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

- Apply and gain an in-depth knowledge on materials and inspection
- Learn materials technology applied in the oil and gas industry covering fabrication methods, technical specifications, testing, inspection and preservation techniques
- Identify the types of materials used in oil and gas industry covering piping, rotating equipment, static equipment, electrical materials, instrumentation materials, automation technology, welding metallurgy, lubricants, oils and chemicals and drilling materials
- Discuss physical, chemical and mechanical properties of materials
- Classify and specify material as well as identify the ferrous and non-ferrous metals, plastics and composite materials
- Demonstrate knowledge in material processing, heat treatment, material selection, metallurgy, NDT techniques and materials fabrication/construction techniques
- Recognize material defects and material corrosion mechanisms
- Apply material requisition as per the standards and code requirements
- Illustrate material management cycle, material preservation technology and material inspection
- Inspect and test material in a professional manner and distinguish the acceptance/rejection criteria during the inspection process
- Verify material certificates availability as per purchase order for materials received and complete “Certificates Receipt Reports” as per verification results ensuring that items with serial numbers, heat numbers, and traceability are arranged
- Ensure that the materials certification documents are properly scanned and, along with required information, entered into warehouse “Material Certificates Database” by provision of spot checks
- Communicate with user departments on resolving material inspection and certification issues and complete “Certificates Issue Reports” as per user department requests for materials
- Perform technical report writing, complete “Transfer To Disposal” forms for user consideration and ensure that all rejected materials are segregated and kept in quarantine or disposal area in conjunction with Warehouse Supervisor

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 overview of all significant aspects and considerations of materials and inspection for purchase inspection engineers, materials engineers, senior certificate management engineers, certificate management engineers, inspection engineers, material control engineers and certificate management technical staff.

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: -

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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. However, we have the right to change the course instructor 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 **Material Science & Selection, Material Selection & Corrosion Control, Material Certification Management, 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.

Course Fee

US\$ 5,500 per Delegate. 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 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	<i>Registration & Coffee</i>
0800 - 0815	<i>Welcome & Introduction</i>
0815 - 0830	PRE-TEST
0830 - 0930	<i>Overview of Materials Types Used in Oil & Gas Industry</i> <i>Piping • Rotating Equipment • Static Equipment • Electrical Materials • Instrumentation Materials • Automation Technology • Welding Metallurgy • Lubricants, Oils and Chemicals • Drilling Materials</i>
0930 - 0945	<i>Break</i>
0945 - 1000	<i>Physical Properties of Material</i>
1000 - 1030	<i>Chemical Properties of Materials</i>
1030 - 1100	<i>Mechanical Properties of Material</i>
1100 - 1230	<i>Material Classification</i>
1230 - 1245	<i>Break</i>
1230 - 1300	<i>Materials Technical Specifications</i>
1300 - 1330	<i>Ferrous Metal</i>
1330 - 1420	<i>Non-Ferrous Metals</i>
1420 - 1430	<i>Recap</i>
1430	<i>Lunch & End of Day One</i>

Day 2

0730 - 0830	<i>Plastic & Composite Material</i>
0830 - 0930	<i>Material Processing & Heat Treatment</i>
0930 - 0945	<i>Break</i>
0945 - 1030	<i>Material Selection</i>

1030 - 1130	Metallurgy Overview
1130 - 1230	Awareness of NDT Techniques
1230 - 1245	<i>Break</i>
1245 - 1330	Materials Fabrication/Construction Techniques
1330 - 1420	Material Inherent Defects
1420 - 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 - 0830	Material Defects During Fabrication
0830 - 0930	Material Defects Due to Service
0930 - 0945	<i>Break</i>
0945 - 1030	Corrosion Mechanism
1030 - 1130	Making Material Requisition as per Standard and Code Requirements
1130 - 1230	Material Management Cycle
1230 - 1245	<i>Break</i>
1245 - 1330	Materials Preservation Technology
1330 - 1420	Material Inspection as per Codes & Standards
1420 - 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4

0730 - 0830	Inspection & Testing <i>Inspection & Testing Techniques • Quality Assurance/Quality Control</i>
0830 - 0930	Acceptance/Rejection Criteria as per Material Code
0930 - 0945	<i>Break</i>
0945 - 1030	Material Test Certificate Review
1030 - 1130	Material Loading
1130 - 1230	Material Receiving Report
1230 - 1245	<i>Break</i>
1245 - 1330	Material Certificate Verification
1330 - 1420	Certificate Receipt Report
1420 - 1430	Recap
1430	<i>Lunch & End of Day Four</i>

Day 5

0730 - 0830	Material Certificates Database
0830 - 0930	Resolving Material Inspection & Certification Issues
0930 - 0945	<i>Break</i>
0945 - 1030	Technical Report Writing
1030 - 1100	Certificate Issue Report
1100 - 1130	Transfer to Disposal Forms
1130 - 1230	Material Rejection & Segregation Procedures
1230 - 1245	<i>Break</i>
1245 - 1345	Site Visits to KOC Assets & Warehouse (exchange between employees working in each)
1345 - 1400	Course Conclusion
1400 - 1415	POST-TEST
1415 - 1430	Presentation of Certificates
1430	<i>Lunch & End of Course</i>

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

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