COURSE OVERVIEW FE0380
Introduction to Welding Engineering, Fabrication and Inspection

Course Title
Introduction to Welding Engineering, Fabrication and Inspection

Course Date/Venue
Session 1: June 22-26, 2025/Crowne Meeting Room, Crowne Plaza Al Khobar, KSA
Session 2: September 21-25, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
FE0380

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

Course Description

This practical and 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.

The course will cover the following topics:

- Welding processes
- Welding consumables
- Design of welded joints
- Applied welding metallurgy and heat treating
- Welding quality control
- Nondestructive testing

Each session will be conducted in a lecture/discussion format designed to provide intensive instruction and guidance. The instructor will be available following each day's session to provide participants with further opportunity for discussion and consideration of specific problems.

Course Objectives

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

- Appy and gain good working knowledge on welding engineering, fabrication and inspection
- Illustrate welding processes and consumables
- Discuss joint designs, laminations and lamellar tearing
- Explain the fatigue of welded structures as well as heat exchanger tube to tubesheet joints
- Identify dissimilar welds and weld overlay and apply welding metalurgy and heat treating
- Determine welding quality control and employ welding codes and standards

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

The course is intended for equipment-oriented engineers and other technical staff who desire to learn basic principles and applications of welding.

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 accreditation 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. Mohamed Kader (**FE**), BSc, PgDip, PMI-PMP, NDT, CSWIP, API is a **Senior Inspection Engineer** with over **20 years** of practical experience within the **Oil & Gas**, **Petrochemical** and **Refinery industries**. His expertise widely covers in the areas of **Welding** Inspection, **Welding** Technology, **Welding** & Fabrication, **Welding** Defects Analysis, **Welding** Engineering, **Welding** Procedure Specification, **Welding** Quality & Control, **Welding** Safety, Aluminum **Welding**, Arc **Welding** Skill, Steel Structure **Welding**, **Tank Repairs**, **Design**, **Fabrication**, **Construction**, **Installation**, **Commissioning**, **Inspection & Maintenance** of **Process Equipment**, **Aboveground Storage** Tank Inspection, **Tank Repair**, **Alteration & Reconstruction**, **Tank & Vessels** Inspection, Repair & Modification, **Pressure Vessels** Inspection, **Steam Generator** Repair, **Boilers**, **Piping** Systems, **Pipeline** Operation & Maintenance, **Pipeline** Systems, **Pipeline** Design & Construction, **Pipeline** Inspection & Rehabilitation, **Corrosion**, Fitness for Service (**FFS**), Risk Based Inspection (**RBI**), **Integrity** Management, **Pipeline** Rehabilitation & Repair, **Pipeline** Design & Maintenance, **Pipeline Integrity** Assessment, **Corrosion Monitoring & Cathodic Protection**, **Pressure & Leak** Testing, Piping Inspection, Pipe Lines, Piping Fabrication, Pipe Flow, Gas Pipe Line, Non-Destructive Testing & Engineering Materials, NDT Methods & Application, Magnetic Particle Inspection & Testing, Radiographic Inspection & Testing, Visual Inspection, Leak Testing, Cathodic Protection, Damage Mechanisms, Pressure Vessels, Tanks, Heat Exchangers, RT Films Interpretation, Fire Heaters Revamping, Waste Water Heater, Distillation Towers, Crude Oil Tank, Steam Power Plant, Spherical Tanks and Asset Integrity Management. Further, he is also well-versed in **Contract** Management & Administration, **Project** Management, **Project** Scheduling & Cost Control, **Project** Supervision, **Project** Reporting, **Project Investment** & **Risk Analysis**, **Project** Delivery & Governance Framework, **Project Risk** Management, **Risk** Identification Tools & Techniques, **Project** Life Cycle, **Project Stakeholder** & **Governance**, **Project Time** Management, **Project Cost** Management, **Project Quality** Management and **Quality** Assurance. He is currently the **Project Manager** of SOPCO wherein he is managing the project team, evaluating projects and ensuring that the projects meet the quality standards.

During his career life, Mr. Mohamed occupied several significant positions and dedication as the **Projects Engineer**, **Piping & QC Leader**, **Piping Engineer**, **QA/QC Engineer** and **Senior Trainer/Instructor** for various international companies like the Gulf of Suez Petroleum Company (GUPCO), Khalda Petroleum Company (KPC), ADMA-OPCO, Kahalda Petroleum Company, East Gas and MASSA Inspection and Consultation Company.

Mr. Mohamed has a **Bachelor's** degree in **Mechanical Power Engineering** and a **Postgraduate Diploma** in **Welding Science & Technology**. Further, he is a **Certified Instructor/Trainer**, a **Certified Project Management Professional** (**PMI-PMP**), a **Certified Senior Welding Inspector** (**CSWIP 3.1**), a **Certified API 510 Pressure Vessel Inspector**, a **Certified API 570 Piping Inspector**, a **Certified API 653 Tank Inspector** and a **Certified NDT Level II Inspector** in Radiographic Testing (**RT**), Ultrasonic Testing (**UT**), Magnetic Particle Testing (**MT**) and liquid Penetrant Testing (**PT**). He has further delivered numerous trainings, courses, seminars, conferences and workshops internationally.

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	***Welding Processes*** *Fundamentals ● SMAW (Shielded Metal Arc) ● GTAW (Gas Tungsten Arc) ● GMAW (or MIG) (Gas Metal Arc)*
0930 – 0945	*Break*
0945 – 1100	***Welding Processes (cont'd)*** *FCAW (flux cored) ● SAW (Submerged Arc) ● Stud (Arc & Resistance)*
1100 – 1230	***Welding Processes (cont'd)*** *Special Welding Processes ● Cutting (Oxy-fuel and Arc Air)*
1230 – 1245	*Break*
1245 – 1420	***Welding Consumables – Part 1*** *Material Properties & Tests ● Coated Electrodes*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Welding Consumables – Part 1 (cont'd)*** *Welding Wires & Shielding Gases ● Neutral and Active Fluxes*
0930 – 0945	*Break*
0945 – 1100	***Joint Designs*** *Weld Joints ● Weld Spacing*
1100 – 1230	***Joint Designs (cont'd)*** *Welding Symbols ● Solidification*
1230 – 1245	*Break*
1245 – 1420	***Joint Designs (cont'd)*** *Joint Preparation ● Design for Productivity*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Laminations and Lamellar Tearing***
0930 – 0945	*Break*
0945 – 1100	***Fatigue of Welded Structures***
1100 – 1230	***Heat Exchanger Tube to Tubesheet Joints***
1230 – 1245	*Break*
1245 – 1420	***Heat Exchanger Tube to Tubesheet Joints (cont'd)***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0930	***Dissimilar Welds & Weld Overlay***
0930 – 0945	*Break*
0945 – 1100	***Applied Welding Metallurgy & Heat Treating*** *Metallurgical Properties of Steel*
1100 – 1230	***Applied Welding Metallurgy & Heat Treating (cont'd)*** *Preheating ● Postweld Heat Treating (PWHT)*
1230 – 1245	*Break*
1245 – 1420	***Applied Welding Metallurgy & Heat treating (cont'd)*** *Field Heat Treating Equipment ● Plans for PWHT*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0930	***Welding Quality Control*** *Planning for QC ● Welding Problems and Defects*
0930 – 0945	*Break*
0945 – 1100	***Welding Quality Control (cont'd)*** *Visual Inspection ● Employment of NDT ● Welder Training & Qualification*
1045 – 1230	***Welding Codes and Standards*** *ASME, API, and AWS Codes ● Base Metal Classifications*
1230 – 1245	*Break*
1245 – 1345	***Welding R&D***
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

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

Course Coordinator

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