COURSE OVERVIEW FE0429-4D
ASME Section IX, Welding and Brazing

Course Title
ASME Section IX, Welding and Brazing

Course Date/Venue
September 16-19, 2024/ Al Aziziya Hall, The Proud Hotel Al Khobar, Al Khobar, KSA

Course Reference
FE0429-4D

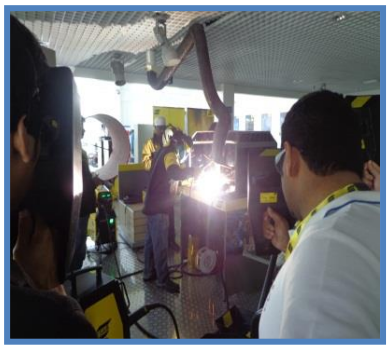
Course Duration/Credits
Four days/2.4 CEUs/24 PDHs

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 course is designed to provide a comprehensive overview of welding and brazing in accordance with ASME Section IX. It covers the general requirements of welding, non-destructive examination, welding procedure and welding performance qualifications as well as welding data that includes variables, techniques, base metals groupings, F-numbers, weld metal chemical composition and specimens.

The course comply with the requirements of ASME Section IX, Welding and Brazing Qualifications. Participants will gain a working knowledge of ASME Section IX. A review of the welding processes and variables, and a review of basic welding metallurgy will be conducted in order to provide all participants with sufficient background in welding technology to interpret and understand Section IX. The mechanics of using Section IX and how to address its requirements will be explained in a simple, straightforward manner.



Emphasis will be placed on writing welding procedures so that they contribute positively to the manufacturing process and on qualifying procedures in a costeffective manner. The requirements for welders, brazers and operators will be examined with particular emphasis on minimizing the cost and maximizing the usefulness of qualifications. Time will be provided to address individual participant's problems and concerns.

Course Objectives

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

- Apply and gain an in-depth knowledge on welding and brazing in accordance with the international standard ASME Section IX
- Discuss the general requirements of welding and identify the test positions for groove and fillet welds, types and purposes of tests and examinations
- Determine non-destructive examination and apply proper procedure for tension testing, guided-bend testing, notch-toughness testing, fillet-weld testing and other tests and examinations
- Review welding procedure qualifications and welding performance qualifications
- Illustrate welding data covering variables, techniques, base metals groupings, F-numbers, weld metal chemical composition and specimens

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, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of welding and brazing in accordance with the international standard ASME Section IX for welding engineers, inspection engineers, facility integrity engineers, fabrication engineers, mechanical engineers, NDT personnel, quality assurance personnel, testing laboratory personnel, and maintenance personnel. Further, this course is a must for those who are involved in inspection of welding construction, qualifying welders, brazers and operators or involved in writing and qualifying welding and brazing procedure specifications, reviewing supplier procedures, auditing or reviewing in-house procedures and qualifications and those who estimate jobs in compliance of ASME code.

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 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 **2.4 CEUs** (Continuing Education Units) or **24 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.

Accommodation

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

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:

Dr. Tony Dimitry, PhD, MSc, BSc, is a **Senior Corrosion & Metallurgical Engineer** with over **35 years** of industrial experience. His expertise covers **Corrosion** Prevention, **Cathodic Protection** Systems, **Corrosion Control**, **Corrosion Inhibition**, **Corrosion** Management in Process Operations, **Corrosion** Engineering, **Metallurgical** Failure Analysis & Prevention, **Fabrication & Repair**, **Corrosion** & Prevention of Failures, **Material** Selection, **Welding** Technology, **Welding Defects** Analysis, **Brazing/Soldering**, **Steel Manufacturing**, **Facility Integrity**, **Ladle Furnace Treatment**, **Ferro-Alloys Production**, **Tank Farm & Tank Terminal Safety**, Integrity Management, Fitness-for-Service (**FFS**), Process Plant Equipment, **Pressure Vessels**, **Piping & Storage Facilities**, Piping **Vibration** Analysis & Practical Engineering Solutions, Remaining Life Assessment & Repair of **Pressure Equipment & Piping**, **Pipeline** Operations & Maintenance, Gas Transportation Piping Code, **Maintenance** Management, **Reliability** Management, **Rotating Equipment**, **Static Equipment**, **Failure Analysis**, **FMEA** and **Preventive & Predictive** Maintenance. Currently, he is in charge of the **metallurgical failure analysis** and the usage of fracture mechanics for determining crack propagation in impellers of turbines.

During his career life, Dr. Dimitry held a significant positions such as the **Operations Engineers**, **Technical Trainer**, **HSE Contracts Engineer**, **Boilers Section Engineer**, **Senior Engineer**, **Trainee Mechanical Engineer**, **Engineer**, **Turbines Section Head**, **Professor**, **Lecturer/Instructor** and **Teaching Assistant** from various multinational companies like **Chloride Silent Power Ltd.**, **Technical University of Crete**, **National Nuclear Corporation**, **UMIST Aliveri Power Station** and **HFO Fired Power Station**.

Dr. Dimitry has a **PhD**, **Master's** and **Bachelor's** degree in **Mechanical Engineering** from the **Victory University of Manchester** and the **University of Newcastle**, **UK** respectively. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**) and an associate member of the American Society of Mechanical Engineers (**ASME**) and Institution of Mechanical Engineers (**IMechE**). He has further delivered various trainings, seminars, courses, workshops and conferences internationally.

Course Fee

US$ 4,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course 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	***Monday 16th of September 2024***
0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Welding General Requirements*** *General ● Weld Orientation*
0930 – 0945	*Break*
0945 – 1030	***Welding General Requirements (cont'd)*** *Test Positions for Groove Welds ● Test Positions for Fillet Welds*
1030 – 1230	***Welding General Requirements (cont'd)*** *Types and Purposes of Tests & Examinations*
1230 – 1245	*Break*
1245 – 1420	***Welding Process (SMAW-GMAW-GTAW) - Video***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2	***Tuesday 17th of September 2024***
0730 – 0900	***Non-Destructive Examination*** *Tension Tests ● Guided-Bend Tests*
0900 – 0930	*Break*
0930 – 1130	***Non-Destructive Examination (cont'd)*** *Notch-Toughness Tests*
1130 – 1230	***Non-Destructive Examination (cont'd)*** *Fillet-Weld Tests ● Other Tests & Examinations*
1230 – 1245	*Break*
1245 – 1420	***Non-Destructive Examination (PT-MT-UT-RT) - Video***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3	***Wednesday 18th of September 2024***
0730 – 0900	***Welding Procedure Qualifications*** *Welding Discontinuities & Defects ● General ● Preparation of Test Coupon ● Welding Variables ● Temper Bead Welding*

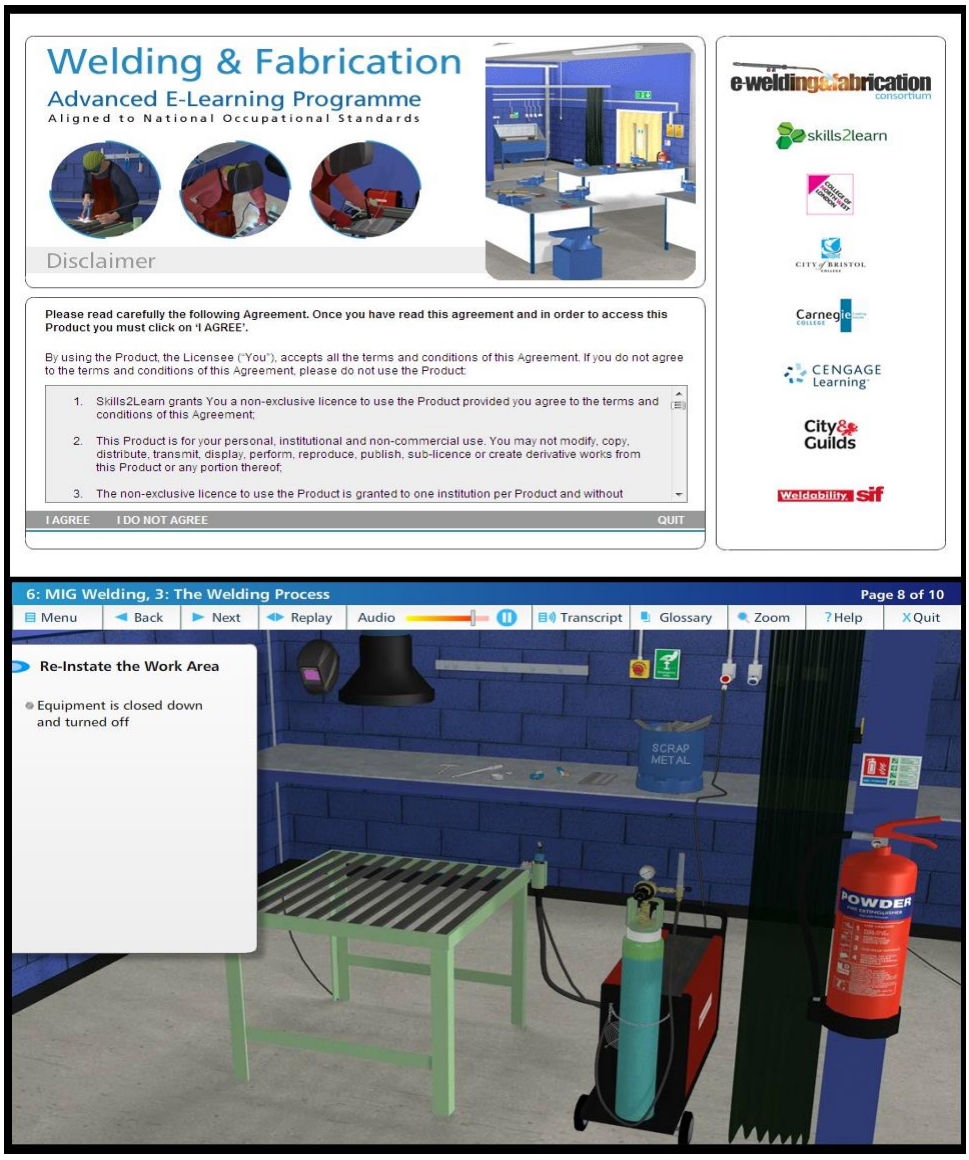
0900 – 0930	*Break*
0930 – 1130	***Welding Performance Qualifications*** *General ● Qualification Test Coupons ● Qualification Test Coupons*
1130 – 1230	***Welding Performance Qualifications (cont'd)*** *Retests & Renewal of Qualification ● Welding Variables for Welders ● Welding Variables for Welding Operators*
1230 – 1245	*Break*
1245 – 1420	***Case Study for Preparing WPS***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4 ***Thursday 19th of September 2024***

0730 – 0900	***Welding Data*** *Variables ● Techniques*
0900 – 0915	*Break*
0915 – 1100	***Welding Data (cont'd)*** *Base Metal Groupings ● F-Numbers ● Weld Metal Chemical Composition ● Specimens*
1100 – 1230	***Case Study for Preparing PQR***
1230 – 1245	*Break*
1245 – 1345	***Case Study for Reviewing WPS/PQR***
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 "E-Welding & Fabrication" simulator.



E-Welding & Fabrication

Course Coordinator

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