COURSE OVERVIEW FE0399
API 1104: Welding of Pipelines & Related Facilities

Course Title
AP 1104: Welding of Pipelines & Related Facilities

Course Date/Venue
Session 1: January 14-18, 2024/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
Session 2: June 03-07, 2024/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference
FE0399

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.

This course is designed to provide participants with a detailed and up-to-date overview of welding of pipelines and related facilities in accordance with API 1104 standards. It covers the specifications, equipment and materials; the qualification of welding procedures with filler metal additions; the welding procedure specification, welding of test joints-butt welds and testing of welded joints-butt welds; the welding of test joints-branch and fillet welds and testing of welded joints-branch and fillet welds; the qualification of welders; and the visual examination, destructive testing and nondestructive testing (NDT)-butt welds only.

Further, the course will also discuss the retesting and disposition of test results; the design and preparation of a joint for production welding; the use of lineup clamp for butt welds, cleaning between beads, position and roll welding; the preheat, interpass temperature, postheat and PWHT; the inspection and testing of production welds; the qualification and certification of inspection personnel; and the acceptance standards for NDT.

During this interactive course, participants will learn the radiographic testing, magnetic particle testing, liquid penetrant testing and ultrasonic testing; the visual acceptance standards, repair and removal of weld defects and repair welder qualification; the repair welding, NDT and weld repair acceptance criteria and procedures for nondestructive testing (NDT); the mechanized welding with filler metal additions, procedure qualification and welding procedure specification; the testing of welded joints-butt welds, qualification of welding operators and records of qualified operators; the inspection and testing of production welds; the repair and removal of defects; and the API 1104, AWS D1.1 and ASME Section IX.

Course Objectives

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

- Apply and gain a good working knowledge on welding of pipelines and related facilities in accordance with API 1104 standards
- Discuss the specifications, equipment and materials
- Identify the qualification of welding procedures with filler metal additions
- Carryout welding procedure specification, welding of test joints-butt welds, testing of welded joints-butt welds, welding of test joints-branch and fillet welds and testing of welded joints-branch and fillet welds
- Discuss the qualification of welders and apply visual examination, destructive testing and nondestructive testing (NDT)-butt welds only
- Carryout retesting and disposition of test results, design and preparation of a joint for production welding and using of lineup clamp for butt welds and cleaning between beads
- Determine position and roll welding, preheat, interpass temperature, postheat and PWHT
- Inspect and test production welds, apply qualification and certification of inspection personnel and develop acceptance standards for NDT
- Employ radiographic testing, magnetic particle testing, liquid penetrant testing and ultrasonic testing
- Review visual acceptance standards, demonstrate repair and removal of weld defects and recognize repair welder qualification
- Inspect repair welding, identify NDT and weld repair acceptance criteria and explain procedures for nondestructive testing (NDT)
- Discuss mechanized welding with filler metal additions, procedure qualification and welding procedure specification
- Test welded joints-butt welds, identify qualification of welding operators and review the records of qualified operators
- Inspect and test production welds and apply repair and removal of defects
- Discuss API 1104, AWS D1.1 and ASME Section IX

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 pipelines and related facilities in accordance with API 1104 standards for welders and fabricators.

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

Dubai	**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.
Abu Dhabi	**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.

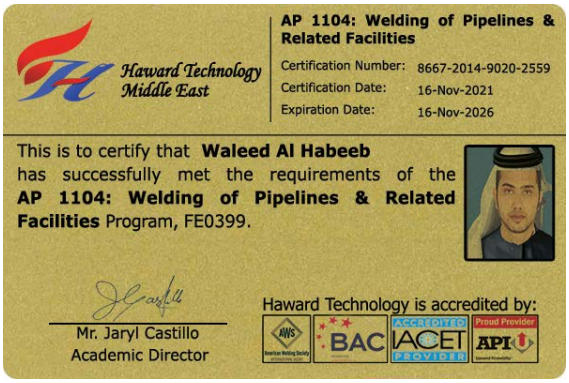
Course Certificate(s)

(1) Internationally recognized Wall Competency Certificates and Plastic Wallet Card Certificates will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-



(2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET Accredited Continuing Education Units (CEUs) earned during the course.

Haward Technology Middle East

Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 16-Nov-21

HTME No. 8667-2014-9020-2559

Participant Name: Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
FE0399	AP 1104: Welding of Pipelines & Related Facilities	November 12-16, 2021	30	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

TRUE COPY

Jaryl Castillo
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2013 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 Association 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 is accredited by

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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 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. Geoff Kaschula is a **Senior Welding Engineer** with over **45 years** of extensive experience within the **Oil & Gas**, **Petrochemical**, **Process** and **Power Industries**. His fields of specialization widely cover in the areas of **Design**, **Fabrication**, **Construction**, **Installation**, **Commissioning**, **Inspection** & **Maintenance** of **Process Equipment** such as Factory Acceptance Test (**FAT**), **Boilers**, **Pressure Vessels**, **Piping Systems**, **Structures** & **Storage Tanks**; **Condition Assessment** of Rotating & Auxiliary Equipment like **Compressors**, **Steam Turbines**, **Pumps**, **Heat Exchangers** & **Valves**; Risk Based Inspection (**RBI**), Fitness-For-Service (**FFS**), **In-Service Inspection & Condition** Assessment, **Steam Drums & Pressure Vessels**, **Tanks**, **Piping** Inspection, **Welding & Fabrication** Engineering, **Welding** Technology, Fabrication, **Welding** Inspection, Advanced Integrity Management for **Corrosion** & Inspection, **Failure Analysis**, Flaw Evaluation, Remnant Life Determination, Capacity Reviews for Process and Power Equipment, Asset Management and Project Management. He has also worked extensively with international industry standards such as ASME VIII div 1 & 2, TEMA, BS/EN 13445, BS/EN 12952, API 650, API 653, ANSI B31.1, ANSI B31.3, PD5500, AWS D1.1, SANS 10162, just to name a few. Mr. Kaschula is currently the **Director** of **RBI-Asset Management** wherein he provides technical support and consultancy services in the field of physical infrastructure asset management.

During his career life, Mr. Kaschula has gained his practical and field experience through his various significant positions and dedication as the **Director/Owner**, **Project Manager**, **QE Division Manager**, **Resident Inspection Engineer**, **Refurbishment Inspection Engineer**, **Inspection Engineer**, **Welding Engineer**, **QA/QC Engineer**, **Appointed Statutory Management Representative**, **Technical Assessor** and **Senior Instructor/Trainer** for numerous international companies like the Parsons Brinckerhoff Africa, Weltech CC., Projects Expedited (Pty) Ltd., Airtec Davidson (Pty) Ltd. and Hubert Davies,
Arnot & Hendrina Power Station, Projects Expedited, Airtech Davidson & the Department of Transport.

Mr. Kaschula has a **National Diploma** (**Welding Engineer**) and a **Registered Professional Technologist** and **International Welding Technologist**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**), a **Certified API 510 Pressure Vessel Inspector**, a **Certified API 570 Piping Inspector**, a **Certified API 580 Risk Based Inspector**, a **Registered Inspector** & **Competent Person** for Boilers, Pressure Vessels & Pressure Equipment, an ISO 9001 Lead Auditor and a member of South African Institute of Welding. 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 – 0900	***Introduction to API 1104***
0900 - 0930	***Specifications, Equipment & Materials***
0930 - 0945	*Break*
0945 - 1030	***Qualification of Welding Procedures with Filler Metal Additions***
1030 - 1100	***Welding Procedure Specification***
1100 - 1145	***Welding of Test Joints-Butt Welds***
1145 – 1200	*Break*
1200 - 1245	***Testing of Welded Joints-Butt Welds***
1245 – 1330	***Welding of Test Joints-Branch & Fillet Welds***
1330 – 1420	***Testing of Welded Joints-Branch & Fillet Welds***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Qualification of Welders***
0830 – 0930	***Visual Examination***
0930 - 0945	*Break*
0945 – 1030	***Destructive Testing***
1030 – 1120	***Nondestructive Testing (NDT)-Butt Welds Only***
1120 – 1215	***Retesting & Disposition of Test Results***
1215 – 1230	*Break*
1230 – 1300	***Design & Preparation of a Joint for Production Welding***
1300 - 1330	***Use of Lineup Clamp for Butt Welds***
1330 – 1420	***Cleaning Between Beads***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***Position & Roll Welding***
0830 – 0930	***Preheat, Interpass Temperature, Postheat & PWHT***
0930 - 0945	*Break*
0945 – 1030	***Inspection & Testing of Production Welds***
1030 – 1120	***Qualification & Certification of Inspection Personnel***
1120 – 1215	***Acceptance Standards for NDT***
1215 – 1230	*Break*
1230 – 1300	***Radiographic Testing***
1300 - 1330	***Magnetic Particle Testing***
1330 – 1420	***Liquid Penetrant Testing***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

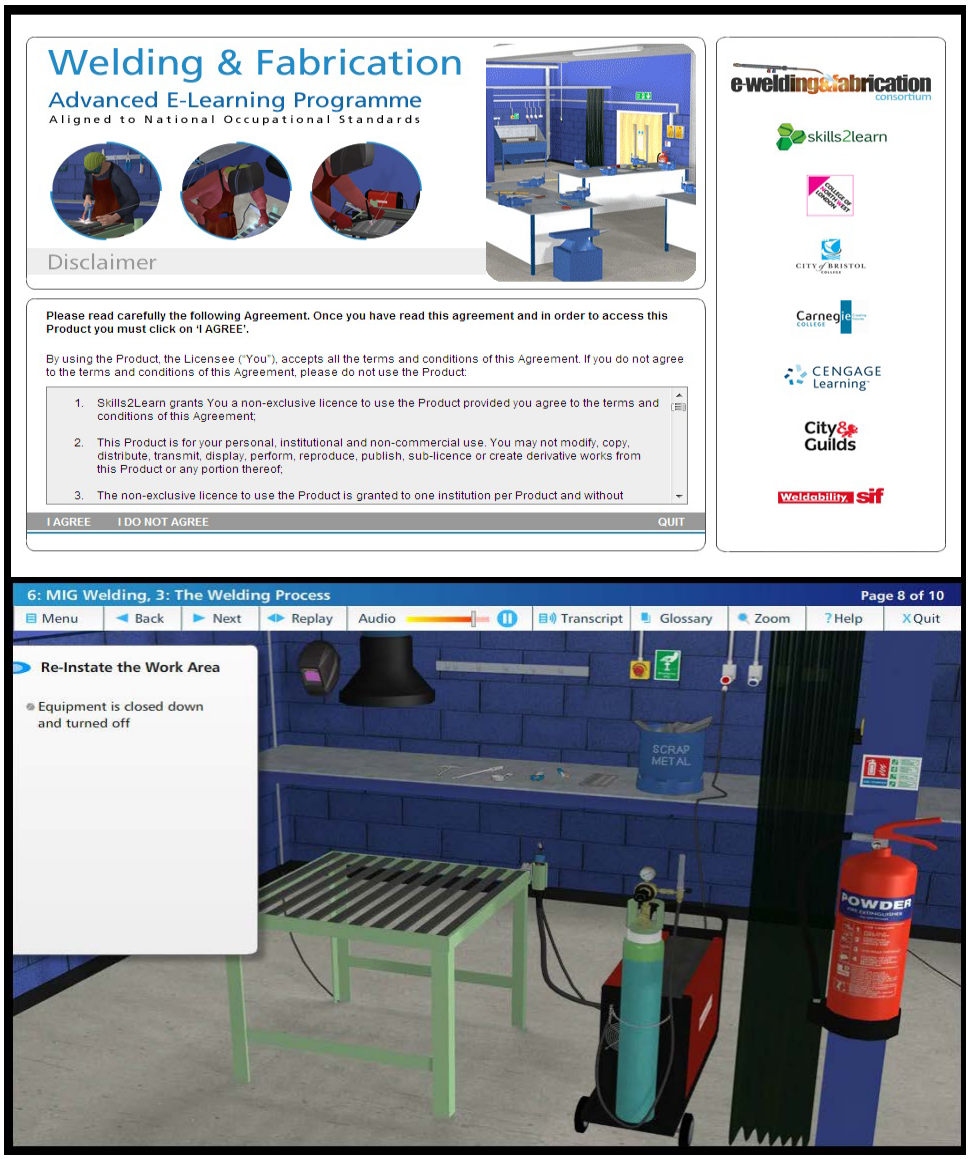
0730 – 0830	***Ultrasonic Testing***
0830 – 0930	***Visual Acceptance Standards***
0930 - 0945	*Break*
0945 – 1030	***Repair & Removal of Weld Defects***
1030 – 1120	***Repair Welder Qualification***
1120 – 1215	***Inspection of Repair Welding***
1215 – 1230	*Break*
1230 – 1300	***NDT & Weld Repair Acceptance Criteria***
1300 - 1330	***Procedures for Nondestructive Testing (NDT)***
1330 – 1400	***Mechanized Welding with Filler Metal Additions***
1400 - 1420	***Procedure Qualification***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0820	***Welding Procedure Specification***
0820 – 0900	***Testing of Welded Joints-Butt Welds***
0900 - 0930	***Qualification of Welding Operators***
0930 – 0945	*Break*
0945 – 1015	***Records of Qualified Operators***
1015 – 1045	***Inspection & Testing of Production Welds***
1045 – 1115	***Repair & Removal of Defects***
1115 – 1130	*Break*
1130 – 1215	***API 1104 & AWS D1.1***
1215 - 1300	***ASME Section IX***
1300 – 1315	***Course Conclusion***
1315 – 1415	***COMPETENCY EXAM***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of the 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 one of our state-of-the-art simulators "E-Welding & Fabrication" and "AWS Tool Kit".



E-Welding & Fabrication

AWS Tool Kit

Structural Weld Replica Kit

Course Coordinator
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