COURSE OVERVIEW ME0138
Application of Standards in Boiler, Pressure Vessel & Piping Systems

Course Title
Application of Standards in Boiler, Pressure Vessel & Piping Systems

Course Reference
ME0138

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

Course Date/Venue

Session(s)	Date	Venue
1	May 26-30, 2024	Oryx Meeting Room, Doubletree By Hilton Doha-Al Sadd, Doha, Qatar
2	August 25-29, 2024	Kizkulesi, Crown Plaza Istanbul Asia Hotels & Convention Center, Istanbul, Turkey
3	December 22-26, 2024	The Kooh Al Noor Meeting Room, The H Dubai Hotel, Sheikh Zayed Rd - Trade Centre, Dubai, UAE

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 intended to introduce codes for construction such as ASME boiler and pressure vessel code and ASME piping codes. It will show the similarities and differences between codes and how standards such as B16, MSS, ASTM, and ISO fit into the various codes.

The course will also demonstrate how the different methods of pressure rating of components are used. The course participants will work examples using the four major methods. These methods are pressure rating by table, schedule, proof testing, and computation. The course will give examples of how to work both with components fully complying and with deviations to fit specific cases.

During this interactive course, participants will learn the differences between different standards rating organizations; the history behind various product standards; the appropriate needed product standard; the pressure temperature rating tables; the class rating systems and the method of proof testing; and the proof test documentation and comparison method of pressure rating.

Course Objectives

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

- Apply and gain an in-depth knowledge on the application of standards in boiler, pressure vessel and piping systems
- Determine which code applies to their projects and which standards fit each code
- Relate the differences between different standards rating organizations
- Discuss the history behind various product standards
- Specify the appropriate needed product standard
- Illustrate pressure temperature rating tables
- Use class rating systems and apply the method of proof testing
- Evaluate proof test documentation and the comparison method of pressure rating
- Develop and use “unlisted components” and distinguish the fatigue decisions as compared to pressure design
- Compute pressure ratings efficiently

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, course conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of boiler, pressure vessel and piping systems for boiler engineers, utility engineers, piping engineers, vessel engineers, material engineers, stationary engineers, static equipment engineers, purchasing engineers, contracts engineers, inspection engineers, maintenance engineers and other technical staff involved in the application of standards in boiler, pressure vessels and piping systems. Designers who select system components will gain valuable insight. Specification writers and developers will learn how to specify components within the system. Purchasing personnel will learn how to evaluate proposals and prepare quests for material. Inspection and maintenance personnel will learn how to evaluate new and installed components. Managers will gain insight into this complex relationship.

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.

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:

Mr. Attalla Ersan, PEng, MSc, BSc, is a **Senior Mechanical Engineer** with over **35 years** of extensive experience within the **Oil & Gas**, **Hydrocarbon** and **Petrochemical** industries. His expertise widely covers the areas of **Boiler & Steam System** Management, **Waste Heat Recovery**, **Boiler Plant Safety**, **Boiler Controls**, **Steam Distribution** Systems, **Steam Traps**, Pollution Control, Cracked **Gas Compressor**, **Reboilers**, Selection & Operation, **Boiler** Inspection & Maintenance, **Boiler** instrumentation & Controls, **Boiler** Start-up & Shutdown, **Boiler** Operation & Steam System Management, **Boiler** Water Chemistry & Treatment, **Boiler** Efficiency & Waste Heat Recovery, **Boiler** Inspection & Testing, **Boiler** Troubleshooting & Safety, **Boiler** Emissions & Pollution Control, **Pumps Maintenance & Troubleshooting**, **Valve** Maintenance, **Plunger Valve**, **Maintenance & Reliability** Best Practices, **Maintenance & Reliability** Management, **Process Plant** Operations, **Process Plant Startup & Operating Procedure**, **Ethylene & Vinyl Chloride**, **Ethane Cracking Furnaces** Operations, **Ethylene & Polyethylene** Operation, **Acid Gas Treatment**, **Sulphur Recovery**, **EDC & VCM**, Caustic Soda Storage, Debottle-necking, **Process Operation**, **Safety Audits**, **Process Engineering**, **Root Cause Investigations**, **Pyrolysis Cracking**, **Gas Plant Commissioning**, **Loss Prevention Techniques**, **Occupational Hazards**, Hot Tapping & Tie-Ins, Pre-Start-Up Safety Review (**PSSR**), Standard Operating Procedure (**SOP**), Emergency Operating Procedure (**EOP**), Permit to Work Systems (**PTW**), **Steam Cracking**, **Steam Generation**, **Binary Fractionators** Operations, **Tanks Farm & Metering Station Techniques**, **Gas Treatment**, **Sulphur Recovery Process Unit Operation**, **Permit to Work System**, **Emergency Response Planning**, **Sulphur Unit Air Blower**, **Steam Turbine**, **Distillation Columns**, **Gas Treatment**, **Waste & Water Treatment Units**, **Water Meter Reading System** (**MMR**), **Utility Regulation**, **Best Water Equipment**, **Water Fittings**, **Water Tanks Filling Stations, Pumping Station**, **Water Chemistry**, **Water Network Design**, **Pumps**, **Compressors**, **Turbines**, **Motors**, **Turbo-expanders**, **Gears**, **Heat Exchanger**, Hazard and Operability (**HAZOP**) Study, Process Hazards Analysis (**PHA**), **HAZOP** Facilitation, **Loss Prevention**, Consequence Analysis Application, **Gas Detectors** Operation, **Accident/Incident Investigation (Why Tree Method)**, **Occupational Exposure Assessment**, **Fire Fighting & First Aid**, **Environmental Management** and **Basic Safety** Awareness. Further, he is also well-versed in Project Management, Human Resources Consultancy, Manpower Planning, Job Design & Evaluation, Recruitment, Training & Development and Leadership, Creative Problem Solving Skills, Work Ethic, Job Analysis Evaluation, Training & Development Needs, Bidding & Tendering, Technical Report Writing, Supervisory Leadership, Effective Communication Skills and Total Quality Management (TQM). He is currently the **CEO** of **Ersan Petrokimya Teknoloji Company Limited** wherein he is responsible for the design and operation of Biogas Process Plants.

During his career life, Mr. Ersan has gained his practical and field experience through his various significant positions and dedication as the **Policy**, **Organization & Manpower Development Head**, **Training & Development**, **Head**, **Ethylene Plant – Pyrolysis Furnace Engineer**, **Production Engineer**, **Mechanical Engineer**, **Boiler Mechanic**, Process Training Coordinator, Ethylene Plant Shift Supervisor, Ethylene Plant Panel & Fit Operator, Process Training & Development Coordinator, **Technical Consultant**, and **Instructor/Trainer** for Qatar Vinyl Company Limited and Qatar Petroleum Company (QAPCO).

Mr. Ersan is a **Registered Professional Engineer** and has a **Master's degree** of **Education** in **Educational Training & Leadership** and a **Bachelor's degree** of **Petrochemical Engineering**. Further, he is a **Certified Instructor/Trainer** and has delivered numerous trainings, courses, workshops, conferences and seminars internationally.

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

Doha	**US$ 6,000** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Istanbul	**US$ 6,000** per Delegate + **VAT**. This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
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.

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	***Introduction*** *Fundamentals and History of Codes and Standards Development of Standards and Codes*
0930 – 0945	*Break*
0945 – 1130	***Pressure Design Basics*** *Review of Different Methods (Formulae) of Different Codes Including Workshop in the Use of and Differences of those Methods Including Rationale*
1130 – 1230	***Review of Other Concerns in Codes & Standards Requirements*** *Fatigue Design Requirements, Material Selection Including the Differences Between SA and a Designations, Fabrication and Examination Requirements*
1230 – 1245	*Break*
1245 – 1420	***Listed Vs. Unlisted Components*** *How and Why the Various Codes List their Acceptable Standards*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Pressure Rating*** *What it is and What it Means. How it May Vary With Process Conditions*
0930 – 0945	*Break*
0945 – 1100	***Overview of the Various Rating Methods*** *Tables • Testing • Comparison • Computation*
1100 – 1230	***Tables*** *How they are Developed, Reading, Interpolating*
1230 – 1245	*Break*
1245 – 1420	***Testing*** *Types • Weaknesses, Strengths, Workshops*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Workshops***
0930 – 0945	*Break*
0945 – 1100	***By Comparison Method*** *B16.11*
1100 – 1230	***Computational Methods*** *Unlisted Components*
1230 – 1245	*Break*
1245 – 1420	***Workshop in Computation***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

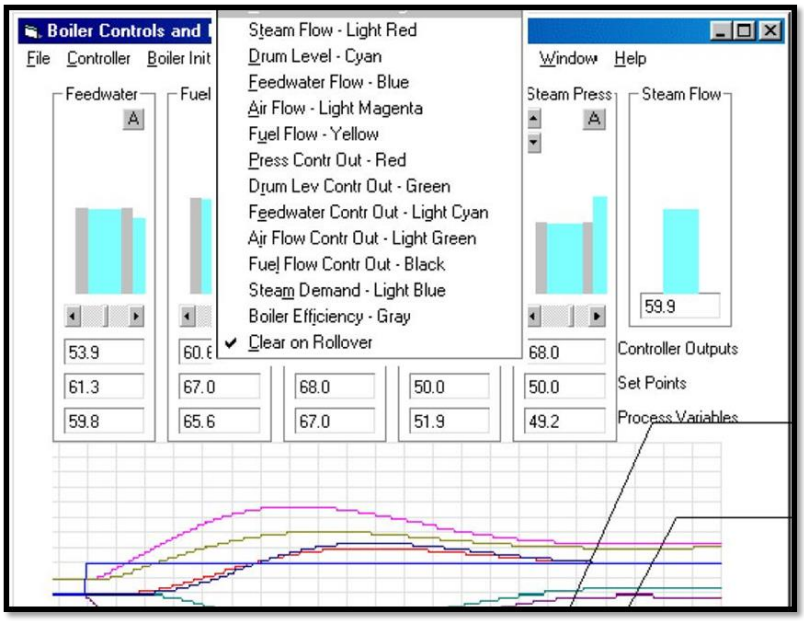
0730 – 0930	***Review of Various Standards*** *B16 • MSS • PFS*
0930 – 0945	*Break*
0945 – 1100	***General Standards*** *Thread • Straight • Taper Threads*
1100 – 1230	***General Standards (cont'd)*** *Thread • Straight • Taper Threads (cont'd)*
1230 – 1245	*Break*
1245 – 1420	***Picking the Proper Standard*** *B16.5 , B16.47 MSS Sp 44 Sp 51 for Example*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

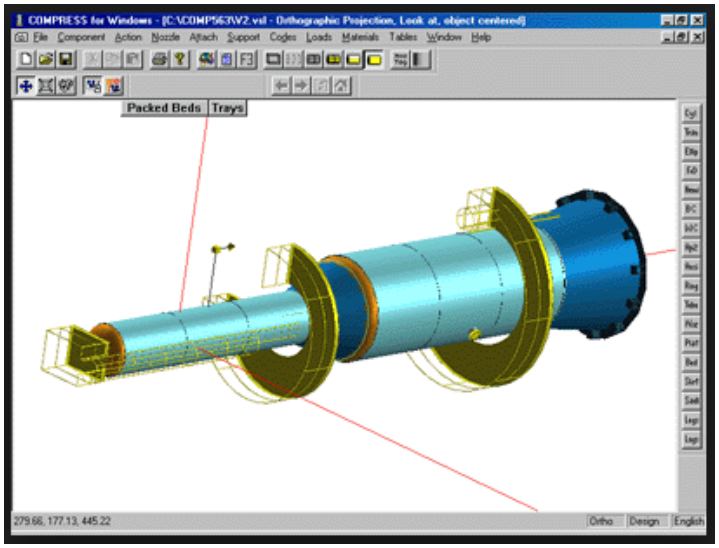
0730 – 0930	***Special Fittings***
0930 – 0945	*Break*
0945 – 1100	***Special Flanges***
1100 – 1230	***Review of What is Happening in Standards***
1230 – 1245	*Break*
1245 – 1345	***Open Forum***
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulator (Hands-on Practical Sessions)

Practical session 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 simulator "Win Boiler Sim" and "COMPRESS".



Win Boiler Sim



COMPRESS Simulator

Course Coordinator

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