

COURSE OVERVIEW ME1035
Oil Storage Tank: Operation and Maintenance

Course Title

Oil Storage Tank: Operation and Maintenance

Course Date/Venue

Session 1: May 19-23, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Session 2: November 09-13, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference

ME1035

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description



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

This course is designed to provide participants with a detailed and up-to-date overview of oil storage tank operation and maintenance. It covers the types, components, codes, standards, regulations and recommended practices of storage tanks; the types and features of storage tanks consisting of primary components, appurtenances, design specifications, operations manuals and documentations; the tank roofs comprising of floating roofs, rim seals, flexible piping system for roofs aluminum dome roofs, fixed roof tanks and internal floaters; the tank emissions concepts; and computation of emissions from internal and external floating roofs.

During this interactive course, participants will learn the tank operations and determine tank entry standard, basic requirements of API 2015, overview of tank bottoms and sludge and problems caused by sludge; the source reduction and mitigation, vapor freeing, degassing, tank cleaning safe vapor freeing and cleaning operation; the inspection and testing requirements of API-650; the vents and fire protection systems, API recommended practice 651 and API recommended practice 652; the tank inspection, tank component evaluation, leak detection methods and tank repair and alteration; and the dismantling and reconstruction including welding inspection and hydrostatic testing.

Course Objectives

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

- Apply systematic techniques on oil storage tank operation and maintenance
- Discuss storage tanks covering its types, components, codes, standards, regulations and recommended practices
- Identify the types and features of storage tanks consisting of primary components, appurtenances, design specifications, operations manuals and documentations
- Discuss tank roofs comprising of floating roofs, rim seals, flexible piping system for roofs aluminum dome roofs, fixed roof tanks and internal floaters
- Explain tank emissions concepts and compute emissions from internal and external floating roofs
- Carryout tank operations and determine tank entry standard, basic requirements of API 2015, overview of tank bottoms and sludge and problems caused by sludge
- Apply source reduction and mitigation, vapor freeing, degassing, tank cleaning safe vapor freeing and cleaning operations
- Identify the inspection and testing requirements of API-650
- Recognize vents and fire protection systems, API recommended practice 651 and API recommended practice 652
- Employ tank inspection, tank component evaluation, leak detection methods and tank repair and alteration
- Carryout dismantling and reconstruction including welding inspection and hydrostatic testing

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 oil storage tank operation and maintenance for managers, engineers and other technical and operational staff involved in the operation, instrumentation or measurement of storage tanks. This includes personnel in-charge of oil movement, bulk storage, marine terminals, tank farms, oil depots and LPG tanks.

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 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.
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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. Kyle Bester is a **Senior Mechanical & Maintenance Engineer** with extensive years of practical experience within the **Oil & Gas, Power & Water Utilities** and other **Energy** sectors. His expertise widely covers in the areas of **Machinery Vibration Monitoring, Vibration Measurement, Machinery Failure Analysis, Vibration & Predictive Maintenance, Machinery Diagnostics & Root Cause Failure Analysis, Alignment & Leveling, Laser Alignment, Coupling & Shaft Alignment Techniques, Alignment Techniques, Mechanical Shaft Alignment & Vibrational Analysis, Laser & Dial-Indicator Techniques, Mitsubishi & Honeywell HVAC Building Management Systems (BMS), HVAC & Refrigeration Systems, HVAC System Monitoring, Preventive Maintenance Scheduling, HVAC Units Fault Detection, Energy Efficiency Optimization, Mitsubishi HVAC Operations, Load Balancing Techniques, Steam Boilers & Oil Combustion, Utility Boilers, Commercial HVAC Controls & DDC, Air Conditioning & Refrigeration, Modern Heating, Ventilation, Air-Conditioning (HVAC) & Refrigeration Systems, Gas Turbine Maintenance & Troubleshooting, Safety Relief Valve Sizing & Testing, PRV & POPRV/PORV, Bearing & Bearing Failure Analysis, Pumps & Valves Maintenance, Coupling, Gear Boxes, Bearings & Lubrication, Mechanical Seals, Pressure Vessel Design & Analysis, Steam & Gas Turbine, High Pressure Boiler Operation, Compressors Operation & Maintenance, Tank Design, Construction, Inspection & Maintenance, Tank & Tank Farms, Hydraulic Modelling, Advanced Surface Storage Facilities & Pipeline Networks, Process Design & Engineering, Piping Control Loops & Heat Exchangers, Safe Process Units Start-Up/Shutdown, Reliability & Asset Management Technology Best Practices, Condition Monitoring System of Rotary Machines, Data Analysis Techniques, Maintenance Planning & Scheduling, Maintenance Shutdown & Turnaround, Maintenance Audit Best Practices, Maintenance & Reliability Management, Reliability, Availability & Maintainability (RAM), Root Cause Analysis and Reliability-Centered Maintenance (RCM). Further, he is also well-versed in **Water Treatment & Reverse Osmosis Units, Water Resources Management & Policies, Water Network Systems & Pumping Stations, Waste Water Effluent Treating Facilities, Best Practice in Sewage & Industrial Waste Water Treatment & Environmental Protection, Oil Refinery & Petrochemical Industry Wastewater Treatment & Operation, Water Network Optimization Strategy, Water Network Operation & Maintenance and Chlorination System.****

During his career life, Mr. Bester has gained his practical and field experience through his various significant positions and dedication as the **Project Manager, Asset Manager, Water Engineer, Maintenance Engineer, Mechanical Engineer, Process Engineer, Supervisor, Team Leader, Analyst, Utility Field Supervisor, HVAC & Building Controls Supervisor, Field HVAC Technician, Process Technician, Landscape Designer and Senior Instructor/Trainer** for various international companies, infrastructures, water and wastewater treatment plants from New Zealand, UK, Samoa, Zimbabwe and South Africa, just to name a few.

Mr. Bester holds a **Diploma in Wastewater Treatment** and a **National Certificate in Wastewater & Water Treatment**. Further, he is a **Certified Instructor/Trainer, an Approved Chemical Handler** and has delivered numerous courses, trainings, conferences, seminars and workshops 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 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 to Storage Tanks Tanks & Tank Farms as Part of Production & Terminal Systems • Tank Types • Tank Components • Tank Design & Engineering Considerations Relative to Performance Parameters, Maximum Allowable Inventory, & Physical, Chemical & Hazardous Properties of Contained Fluids • Codes, Standards, Regulations, & Recommended Practices
0930 – 0945	Break
0945 – 1100	Storage Tank Types & Features Tank Types & Functions • Primary Components
1100 - 1230	Storage Tank Types & Features (cont'd) Appurtenances • Design Specifications
1230 - 1245	Break
1245 - 1420	Storage Tank Types & Features (cont'd) Operations Manuals & Documentations
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 - 0930	Tank Roofs Floating Roofs • Rim Seals • Flexible Piping System for Roofs Aluminum Dome Roofs
0930 – 0945	Break
0945 – 1100	Tank Roofs (cont'd) Fixed Roof Tanks • Internal Floaters
1100 - 1230	Tank Emissions Overview of Tank Emissions Concepts • Computing Emissions from Internal & External Floating Roofs
1230 - 1245	Break

1245 - 1420	Tank Emissions (cont'd) Emission Estimation Procedures for Fixed-Roof Tanks • Emissions from Slotted & Unslotted Guide Poles
1420 - 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 - 0930	Tank Operations Tank Entry Standard • Basic Requirements of API 2015
0930 - 0945	Break
0945 - 1100	Tank Operations (cont'd) Overview of Tank Bottoms & Sludge • Problems Caused by Sludge
1100 - 1230	Tank Operations (cont'd) Source Reduction & Mitigation • Vapor Freeing & Degassing
1230 - 1245	Break
1245 - 1420	Tank Operations (cont'd) Tank Cleaning Safe Vapor Freeing, Degassing & Cleaning Operations
1420 - 1430	Recap
1430	Lunch & End of Day Three

Day 4

0730 - 0930	API-650: Inspection & Testing Requirements Types of Weld Defects • Inspection Methods • Inspection Requirements • Dimensional/Tolerance • Testing
0930 - 0945	Break
0945 - 1100	API-650: Vents & Fire Protection Systems Vents for Fixed Roof Tanks • Vents for Floating Rook Tanks • Fire Protection Systems
1100 - 1230	API-650: Supplementary Information API Recommended Practice 651 • API Recommended Practice 652
1230 - 1245	Break
1245 - 1315	API-653: Introduction Scope of API-653 • Definitions • Starting an API-653 Compliance Program • Cost of an API-653 Compliance Program
1315 - 1420	API-653: Tank Inspection Objectives • Prioritization • Inspection Frequencies • Record Keeping • Inspector Qualification
1420 - 1430	Recap
1430	Lunch & End of Day Four

Day 5: Thursday, 27th of August 2020

0730 - 0930	API-653: Tank Component Evaluation Shell • Bottom • Nozzles • Roof • Foundation • Shell & Bottom Settlement
0930 - 0945	Break
0945 - 1100	API-653: Leak Detection Methods
1100 - 1230	API-653: Tank Repair & Alteration General Considerations • Material Considerations • General Requirements for Repair & Alteration • Removal, Repair, & Replacement of Shell Plate Material • Repair, Addition, Replacement, & Alteration of Shell penetrations • Repair of Tank Bottoms • Tank Roof Repair

1230 - 1245	Break
1245 - 1315	API-653: Dismantling & Reconstruction Dismantling Methods • Reconstruction • Dimensional Tolerances
1315 - 1345	API-653: Examination & Testing General • Welding Inspection • Hydrostatic Testing
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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