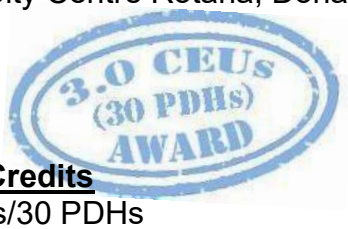
COURSE OVERVIEW PE0010
Oil Movement, Storage & Troubleshooting

Course Title
Oil Movement, Storage & Troubleshooting



Course Date/Venue
Session 1: April 18-22, 2027/Meeting Plus 9, City Centre Rotana, Doha, Qatar
Session 2: November 28-December 02, 2027/Meeting Plus 9, City Centre Rotana, Doha, Qatar

Course Reference
PE0010



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 complete and up-to-date overview of the oil movement, storage and troubleshooting in modern refineries, process plants, oil/gas fields and marine terminals. It covers oil and gas transportation from the production fields to the refinery, process plant or the exporting facilities through land or sea.



Participants of the course will be able to identify the different types of tank; review and improve the operation of a tank farm; illustrate the process of gas freeing of tanks and vessels; determine the various methods of gauging tanks; and employ crude oil processing in modern refineries, marine terminals and oil plants.



The course will also cover LPG refrigeration; handling and bulk storage; terminal custody transfer, tank calibration and strapping, tank gauging technique, pulse radar and continuous wave radar and temperature compensation; leak detection system, the correct system, reliability, sensitivity, leak localization, pipeline observer and leakage classifier; production losses and the types of leaks; fatigue crack, stress corrosion cracking, surged induced vibration and meter performance; marine terminal and SPM operations; various product specifications; blending; tank mixing; meters and meter proving; crude oil and leaded gasoline tanks cleaning; and static electricity including its importance in oil movement, storage and troubleshooting.

Finally, the course will identify the oil spill emergencies; review the operation and cathodic protection of gas transmission lines; explain the pigging of crude and gas pipelines; demonstrate the process of ship loading; recognize the role and the importance of quality assurance, control and work permit system; discuss the ship shore interface; and apply the supervision, control and communication as well as the discussion prior to cargo transfer, ship shore check list and firefighting.

Course Objectives/Outcomes & Benefits for the Participants

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

- Apply a comprehensive overview of the oil movement and storage operations in refineries, process plants, oil/gas fields and marine terminals
- Acquire knowledge on oil production, recovery, dehydration and desalting and understand the description and installation of a tank farm
- Identify the different types of tank and review and improve the operation of a tank farm
- Illustrate the process of gas freeing of tanks and vessels and determine the various methods of gauging tanks
- Employ crude oil processing in modern refineries, marine terminals and oil plants and discuss LPG refrigeration, handling and bulk storage
- Implement terminal custody transfer and carryout tank calibration and strapping, tank gauging technique, pulse radar and continuous wave radar and temperature compensation
- Carryout leak detection system, find the correct system and recognize reliability, sensitivity, leak localisation, pipeline observer and leakage classifier
- Monitor and control production losses and identify the types of leaks
- Define fatigue crack, stress corrosion cracking, surged induced vibration and meter performance
- Describe marine terminal and SPM operations and explain the various product specifications
- Perform blending, tank mixing, meters and meter proving and cleaning of crude oil and leaded gasoline tanks
- Discuss static electricity and recognize its importance in oil movement, storage and troubleshooting
- Identify oil spill emergencies and review the operation and cathodic protection of gas transmission lines
- Increase knowledge on pigging of crude and gas pipelines and demonstrate the process of ship loading
- Recognize the role and importance of quality assurance, control and work permit system
- Discuss ship shore interface and apply supervision, control and communication as well as discussion prior to cargo transfer, ship shore check list and firefighting

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 movement, storage and troubleshooting for process, production, operation, oil movement and storage engineers, managers, supervisors and other technical staff dealing with oil movement and storage in refineries, process plants, oil/gas fields, marine terminals and other exporting facilities.

Training Methodology

Our courses employ an interactive, learner-centred methodology that integrates theoretical knowledge with practical application. The training is delivered through a suitable combination of some or all of the following methods, selected according to the course content and learning objectives:

- Instructor-led presentations and facilitated discussions
- Practical workshops and participant presentations
- Hands-on exercises and real-world case studies
- Equipment demonstrations and technical drawings
- Hardware- and software-based simulations
- Gamification & Role Play in soft-skills courses only
- Virtual Reality (VR) and Augmented Reality (AR)
- Instructional videos and other relevant training resources

This blended approach encourages active participation, strengthens practical skills and supports the effective application of acquired knowledge in the workplace.

Learning Design & Customization

This course can be customized to the exact requirements of clients. Haward Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients.

Course Fee

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.

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

Haward's certificates are accredited 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**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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. Mervyn Frampton is a **Senior Process Engineer** with over **30 years** of industrial experience within the **Oil & Gas**, **Refinery**, **Petrochemical** and **Utilities** industries. His expertise lies extensively in the areas of **Process Troubleshooting**, **Distillation Towers**, **Fundamentals of Distillation** for Engineers, **Distillation** Operation and Troubleshooting, **Advanced Distillation** Troubleshooting, **Distillation** Technology, Vacuum **Distillation**, **Distillation Column** Operation & Control, **Oil Movement** Storage & Troubleshooting, **Process Equipment** Design, Applied **Process Engineering** Elements, **Process Plant** Optimization, **Revamping & Debottlenecking**, **Process Plant** Troubleshooting & Engineering Problem Solving, **Process Plant** Monitoring, **Catalyst** Selection & Production Optimization, Operations Abnormalities & Plant Upset, **Process Plant** Start-up & Commissioning, **Clean Fuel** Technology & Standards, Flare, Blowdown & Pressure Relief Systems, **Oil & Gas Field Commissioning** Techniques, **Pressure Vessel** Operation, **Gas Processing**, **Chemical** Engineering, **Process Reactors** Start-Up & Shutdown, **Gasoline Blending** for Refineries, **Urea Manufacturing** Process Technology, Continuous Catalytic Reformer (**CCR**), **De-Sulfurization** Technology, Advanced Operational & Troubleshooting Skills, Principles of Operations Planning, **Rotating Equipment** Maintenance & Troubleshooting, **Hazardous Waste Management & Pollution Prevention**, **Heat Exchangers & Fired Heaters** Operation & Troubleshooting, **Energy Conservation** Skills, **Catalyst Technology**, **Refinery & Process Industry**, **Chemical Analysis**, **Process Plant**, **Commissioning & Start-Up**, **Alkylation**, **Hydrogenation**, **Dehydrogenation**, **Isomerization**, **Hydrocracking & De-Alkylation**, **Fluidized Catalytic Cracking**, **Catalytic Hydrodesulphuriser**, **Kerosene Hydrotreater**, **Thermal Cracker**, **Catalytic Reforming**, **Polymerization**, **Polyethylene**, **Polypropylene**, Pilot Water Treatment Plant, **Gas Cooling**, **Cooling Water Systems**, Effluent Systems, Material Handling Systems, **Gasifier**, **Gasification**, Coal Feeder System, **Sulphur Extraction Plant**, **Crude Distillation Unit**, **Acid Plant Revamp** and **Crude Pumping**. Further, he is also well-versed in HSE Leadership, Project and Programme Management, Project Coordination, Project Cost & Schedule Monitoring, Control & Analysis, Team Building, Relationship Management, Quality Management, Performance Reporting, Project Change Control, Commercial Awareness and Risk Management.

During his career life, Mr. Frampton held significant positions as the **Site Engineering Manager**, **Senior Project Manager**, **Process Engineering Manager**, **Project Engineering Manager**, **Construction Manager**, **Site Manager**, **Area Manager**, **Procurement Manager**, **Factory Manager**, **Technical Services Manager**, **Senior Project Engineer**, **Process Engineer**, **Project Engineer**, **Assistant Project Manager**, **Handover Coordinator** and **Engineering Coordinator** from various international companies such as the **Fluor Daniel**, **KBR** South Africa, **ESKOM**, MEGAWATT PARK, CHEMEPIC, PDPS, CAKASA, **Worley Parsons**, Lurgi South Africa, **Sasol**, **Foster Wheeler**, **Bosch** & **Associates**, **BCG** Engineering Contractors, Fina Refinery, Sapref Refinery, Secunda Engine Refinery just to name a few.

Mr. Frampton has a **Bachelor's degree** in **Industrial Chemistry** from **The City University** in **London**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Trainer/Assessor** by the **Institute of Leadership & Management** (**ILM**) and has delivered numerous trainings, courses, workshops, conferences and seminars 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	***Oil Production, Recovery, Dehydration & Desalting***
0930 – 0945	*Break*
0945 – 1130	***General Description & Installation of a Tank Farm***
1130 – 1300	***Types of Tank***
1300 – 1315	*Break*
1315 – 1420	***General Operation of a Tank Farm***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Gas Freeing of Tanks & Vessels***
0930 – 0945	*Break*
0945 – 1045	***Methods of Gauging Tanks***
1045 – 1300	***Crude Oil Processing***
1300 – 1315	*Break*
1315 – 1345	***LPG Refrigeration, Handling & Bulk Storage***
1345 – 1420	***Terminal Custody Transfer*** *Tank Calibration & Strapping • Tank Gauging Technique • Pulse Radar & Continuous Wave Radar • Temperature Compensation*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0900	***Leak Detection System*** *Finding the Correct System • Reliability • Sensitivity • Leak Localisation • Pipeline Observer • Leakage Classifier*
0900 – 0915	*Break*
0915 – 1100	***Monitoring & Controlling Production Losses*** *Types of Leakes • Fatigue Crack • Stress Corrosion Cracking • Surged Induced Vibration • Meter Performance*
1100 – 1230	***Marine Terminal & SPM Operations***
1230 – 1245	*Break*
1245 – 1345	***Product Specifications***
1345 – 1420	***Blending***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0815	***Tank Mixing***
0815 - 0900	***Meters & Meter Proving***
0900 – 0915	*Break*
0915 – 1100	***Cleaning of Crude Oil & Leaded Gasoline Tanks***

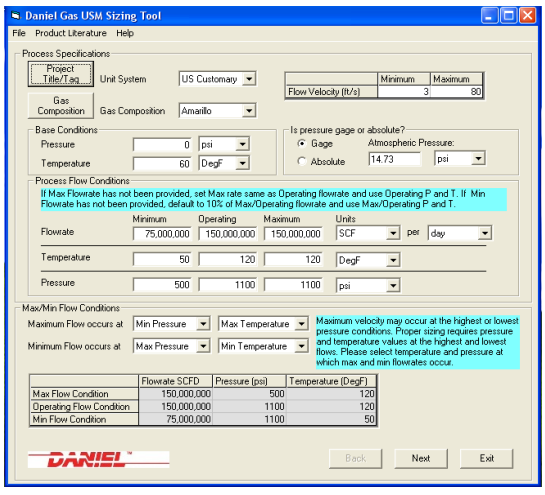
1100 – 1230	***Static Electricity***
1230 – 1245	*Break*
1245 – 1420	***Oil Spill Emergencies***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

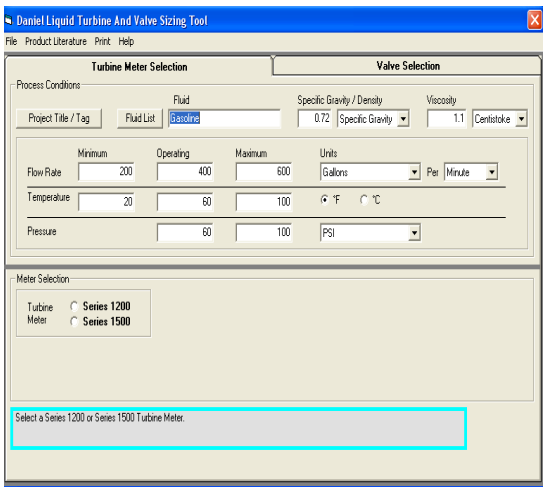
0730 – 0900	***Gas Transmission Lines: Operation & Cathodic Protection***
0900 – 0915	*Break*
0915 – 1100	***Pigging of Crude & Gas Pipelines***
1100 – 1230	***Ship Loading***
1230 – 1245	*Break*
1245 – 1315	***Quality Assurance, Control & Work Permit System***
1315 - 1345	***The Ship Shore Interface*** *Supervision & Control • Communications • Discussion Prior to Cargo Transfer • Ship-Shore Check List • Fire Fighting*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulators (Hands-on Practical Sessions)

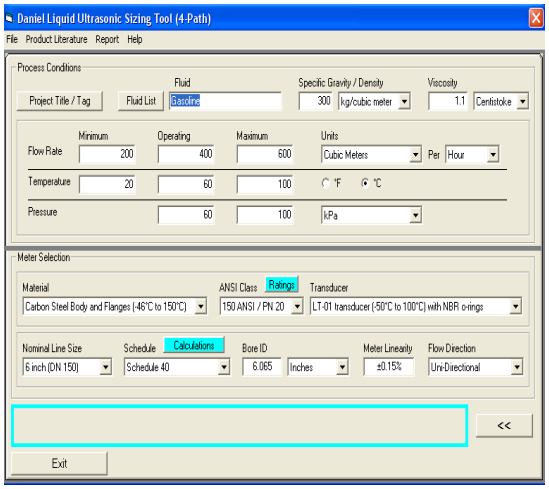
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art simulators "Gas Ultrasonic Meter Sizing Tool", "Liquid Turbine Meter and Control Valve Sizing Tool", "Liquid Ultrasonic Meter Sizing Tool", "Orifice Flow Calculator" and "ASPEN HYSYS" simulator.



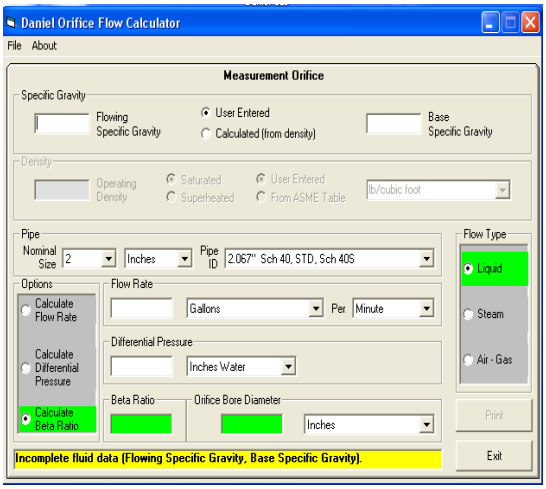
Gas Ultrasonic Meter (USM) Sizing Tool Software



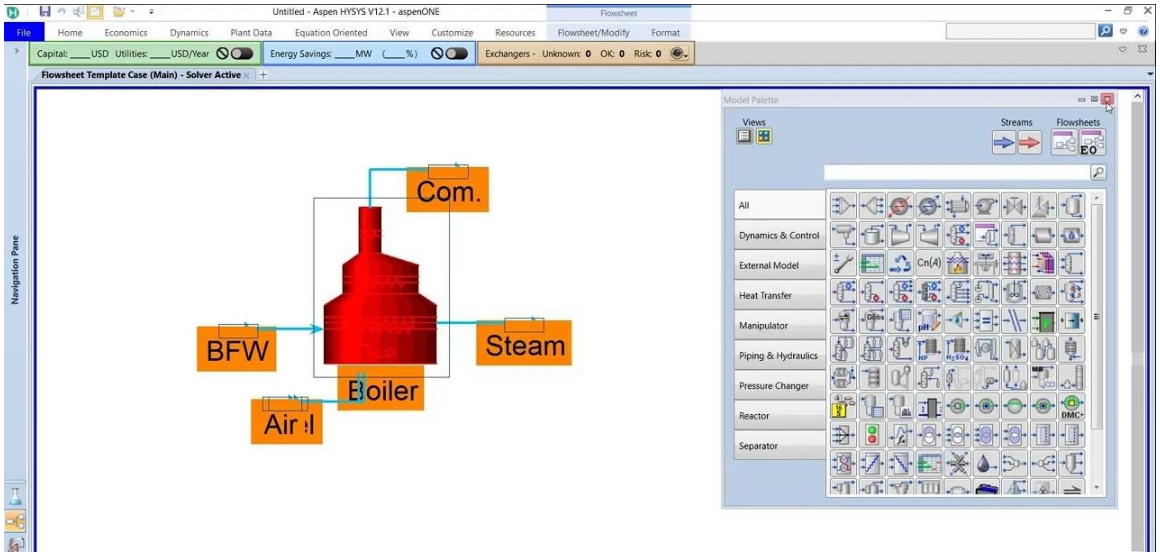
Liquid Turbine Meter and Control Valve Sizing Tool Software



Liquid Ultrasonic Meter Sizing Tool Software



Orifice Flow Calculator Software



ASPEN HYSYS V12.1 Simulator

Course Coordinator
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