

COURSE OVERVIEW PE0085-3D Oil and Gas Operations, Gas Processing, Storage Tanks

CEUS

(18 PDHs)

Course Title

Oil & Gas Field Operations: Gas Processing, Hydrates, Dehydration, Sweetening, NGL Recovery & Fractionation, Oil Production, Desalting, Stabilization, Storage Tanks, Mixers, Meter Proving, Cargo Calculations & Flow Measurement

Course Reference PE0085-3D

Course Duration/Credits

Three days/1.8 CEUs/18 PDHs

Course Date/Venue



Session(s)	Date	INCLOEvenue
1	May 19-21, 2025	Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
2	July 27-29, 2025	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
3	October 27-29, 2025	Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
4	December 21-23, 2025	Tamra Meeting Room, Al Bandar Rotana Creek, 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.

Oil or gas wells produce a mixture of hydrocarbon gas, condensate, or oil; water with dissolved minerals, usually including a large amount of salt; other gases, including nitrogen, carbon dioxide (CO₂), and possibly hydrogen sulphide (H_2S); and solids, including sand from the reservoir, dirt, scale and corrosion products from the tubing.

For the hydrocarbons (gas or liquid) to be sold, they must be separated from the water and solids, measured, sold and transported by pipeline, truck, rail, or ocean tanker to the user. Gas is usually restricted to pipeline transportation but can also be shipped in pressure vessels on ships, trucks, or railroad cars as compressed natural gas or converted to a liquid and sent as a liquefied natural gas (LNG). This course discusses the field processing required before oil and gas can be sold.



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This course is designed to provide participants with a detailed and up-to-date overview of oil and gas field operations. It covers the properties of crude oil; crude assay; types and accessories of tanks; operation and inspection guidelines; corrosion and cathodic protection; tank gauging; tank mixers; meter proving and calculations; meter proving; meter factor and calculations; crude tank cleaning; and gas freeing and line pigging.

The course will also discuss the physical properties of gases; gas liquid separation; hydrates and water content of gas; hydrate inhibition and dehydration of gas; NGL recovery; short cycle units; low temperature separation; mechanical refrigeration; and turbo expander; gas sweetening; amine gas sweetening; MEA loading and corrosion; and amine reclaimer.

Course Objectives

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

- Apply and gain an in-depth knowledge on oil and gas field operations including gas processing, hydrates, dehydration, sweetening, NGL recovery & fractionation, oil production, desalting, stabilization, storage tanks, mixers, meter proving, cargo calculations, flow measurement and same safety aspects
- Discuss properties of crude oil, crude assay, types and accessories of tanks, operation and inspection guidelines, corrosion and cathodic protection and tank gauging
- Recognize tank mixers, meter proving and calculations, meter proving, meter factor and calculations
- Apply crude tank cleaning, gas freeing and line pigging
- Describe physical properties of gases, gas liquid separation, hydrates and water content of gas, hydrate inhibition and dehydration of gas
- Discuss NGL recovery, short cycle units, low temperature separation, mechanical refrigeration and turbo expander
- Differentiate between gas sweetening and amine gas sweetening and identify MEA loading and corrosion and amine reclaimer

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 is intended for those seeking a complete and detailed overview of the various operations that take place in the oil and gas fields. This includes managers, engineers, supervisors and other technical staff. Further, the course is very useful for new recruits and for those who just started to handle responsibilities related to oil and gas operations.



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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: -



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.

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 **1.8 CEUs** (Continuing Education Units) or **18 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 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.



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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. Karl Thanasis, PEng, MSc, MBA, BSc, is a Senior Engineer with over **30 years** of practical experience within the **Oil**, **Gas**, Refinery and Petrochemical industries. His wide expertise includes Process Plant Optimization Technology & Continuous Improvement, Process Engineering Calculations, Process Plant Start Up & Commissioning, Applied Process Engineering Elements, Coke Cooler. Process Plant Start-up &

Commissioning, Process Plant Troubleshooting, Operations Abnormalities & Plant Upset, Process Equipment Applications & Troubleshooting, Process Plant Performance & Efficiency, Gas Sweetening & Sulphur Recovery, Distillation-Column Control & Troubleshooting, Oil Movement & Troubleshooting, Process Plant Operations & Control, Process Equipment Operation, Fired Heaters & Air Coolers Maintenance, Heat Exchangers, Pumps & Compressors, Crude Desalter, Pressure Vessels & Valves, Steam Trapping & Control, Pumps & Valve Maintenance & Troubleshooting, Turbomachinery, Mechanical Alignment, Rotating Equipments, Diesel Generators, Lubrication Technology, Bearing, Predictive & Preventive Maintenance, Root Cause Analysis, Boilers, Oil Field Operation, **Production** Operation, Plant Operation & Commissioning, **Crude Oil De** Salting Process, Gas Conditioning, NGL Recovery & NGL Fractionation, Flare System, Storage Tanks, Oil Recovery System and Chemical Injection.

Mr. Thanasis has acquired his thorough and practical experience as the Project Manager, Plant Manager, Area Manager - Equipment Construction, Construction Superintendent, Project Engineer and Design Engineer. His duties covered Plant Preliminary Design, Plant Operation, Write-up of Capital Proposal, Investment Approval, Bid Evaluation, Technical Contract Write-up. Construction and Sub-contractor Follow up, Lab Analysis, Sludge Drying and Management of Sludge Odor and Removal. He has worked in various companies worldwide in the USA, Germany, England and Greece.

Mr. Thanasis is a **Registered Professional Engineer** in the **USA** and **Greece** and has a Master and Bachelor degrees in Mechanical Engineering with Honours from the **Purdue University** and **SIU** in **USA** respectively as well as an **MBA** from the University of Phoenix in USA. Further, he is a Certified Internal Verifier/Trainer/Assessor by the Institute of Leadership & Management (ILM) and a Certified Instructor/Trainer.

Accommodation

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



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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

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0730 - 0800	Registration & Coffee
0800 - 0815	Welcome & Introduction
0815 - 0830	PRE-TEST
0830 - 0850	Oil Production, Recovery, Dehydration & Desalting
0850 - 0910	Properties of Crude Oil
0910 - 0930	Crude Assay
0930 - 0945	Break
0945 - 1015	Types of Tanks
1015 – 1045	Accessories of Tanks
1045 – 1115	Operation & Inspection Guidelines
1115 – 1145	Corrosion & Cathodic Protection
1145 – 1230	Tank Gauging
1230 - 1245	Break
1245 – 1300	Tank Mixers
1300 - 1320	Meter Proving & Calculations
1320 - 1340	Meter Proving
1340 - 1400	Meter Factor & Calculations
1400 – 1420	Crude Tank Cleaning
1420 - 1430	Recap
1430	Lunch & End of Day One

Day 2

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0730 - 0810	Gas Freeing & Line Pigging
0810 - 0850	Gas Freeing & Pigging
0850 - 0930	Case Study
0930 - 0945	Break
0945 - 1045	Physical Properties of Gases
1045 - 1115	Gas Liquid Separation
1115 – 1145	Exercise
1145 – 1230	Hydrates & Water Content of Gas



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1230 – 1245	Break
1245 – 1315	Hydrate Inhibition
1315 – 1345	Dehydration of Gas
1345 – 1400	Exercise
1400 – 1420	Question & Answer, DVD
1420 – 1430	Recap
1430	Lunch & End of Day Two

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0730 - 0810	NGL Recovery
0810 - 0850	Short Cycle Units
0850 - 0930	Low Temperature Separation
0930 - 0945	Break
0945 - 1015	Low Temperature Separation (cont'd)
1015 - 1045	Mechanical Refrigeration
1045 - 1115	Turbo Expander
1115 – 1215	Gas Sweetening
1215 – 1230	Amine Gas Sweetening
1230 – 1245	Break
1245 - 1300	MEA Loading & Corrosion
1300 – 1315	Amine Reclaimer
1315 – 1330	Question & Answer
1330 - 1345	DVD
1345 – 1400	Course Conclusion
1400 - 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course



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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 our state-of-the-art simulators "Gas Ultrasonic Meter Sizing Tool", "Liquid Turbine Meter and Control Valve Sizing Tool", "Liquid Ultrasonic Meter Sizing Tool" and "Orifice Flow Calculator" simulator "Centrifugal Pumps and Troubleshooting Guide 3.0", "SIM 3300 Centrifugal Compressor", "CBT on Compressors" and "ASPEN HYSYS" simulator.

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Process Specifications	Turbine Mater Selection	Valve Selection
Title/Tag_Unit System US Customary Flow Velocity (IV/s) 3 80	Process Conditions Fluid	Specific Gravity / Density Viscosity
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Centrifugal Pumps and Troubleshooting Guide 3.0





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Course Coordinator Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org



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