

COURSE OVERVIEW PE0940
Oil Desalting System Starup, Shutdown, Normal Operations and Troubleshooting

Course Title

Oil Desalting System Starup, Shutdown, Normal Operations and Troubleshooting

Course Date/Venue

Session 1: September 07-11, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
 Session 2: November 10-14, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

PE0940



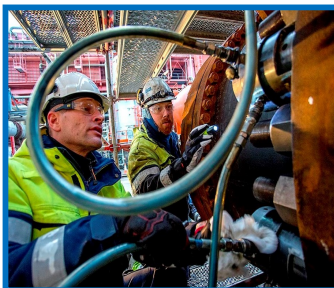
Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



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



The desalting and treatment of crude oil is a process that does not have a high profile, but is vital to the operation of the modern petroleum refinery. Desalters provide more protection to costly refinery equipment than any other single piece of process hardware. Maintaining smooth operation of crude oil desalting units is both critically important and quite difficult. Since there are so many significant variables to control, desalter operation must constantly be adjusted to maintain optimum performance with the ever-changing sources of crude oil.



The course's content is both comprehensive and wide-ranging. Sessions begin with a discussion of the fundamentals of the desalting process including crude oil quality impact, the operating variables, key equipment, various design options and major process variables. Once the fundamentals are established, discussion moves into the topics of unit operations, monitoring, and process troubleshooting.

Course participants will have the opportunity to obtain a broad working knowledge of desalter operations, to gain insight into advancements in the field, and to interact with others working in this area.

Course Objectives

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

- Apply and gain an advanced knowledge on crude oil stabilization
- Identify the benefits of crude oil desalting and apply systematic techniques & procedures on crude stabilization operation
- Explain the impact of crude oil quality on desalter as well as the fundamentals of electrical desalting
- Enumerate the types of applications, desalter components and recognize the desalter design considerations
- Discuss commercial desalter designs including the factors that affect desalter operation and performance
- Carryout stabilization and system troubleshooting of desalter and other electrostatic treating applications

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 intermediate course is designed for operators.

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

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:

	<p>Mr. Basem Al-Qarout is a Senior Process & Chemical Engineer with over 35 years of extensive teaching and field industrial experience. His expertise covers Fundamentals of Process Operations, Hydrocarbon Processing, Process Plant Start-Up & Commissioning, Crude Oil & Refinery Products, Sampling & Feed/Product Quality, Process Troubleshooting & Problem Solving, Separation of Oil/Gas/Water, Oil Field Operations, Gas Field Operations, Oil Production, Gas Processing, Process Equipment Design, Operation of Process Equipment, Hydro-Treating, Hydro-Forming, Hydro-Cracking and Catalyst Technology. Furthermore, he is also well-versed in P&ID and Wiring Schematics Rotating Equipment-Machinery (Pumps, Compressors, Turbines, Fans & Blowers, Electric Motors, Gears & Transmission Equipment), Static Equipment-Stationary, (Heat Exchangers, Distillation Column, How Trays Work, Process Heaters/Furnaces, Reboilers, Condensers, Piping System, Valves) and Process Control & Instrumentation (Process Control, Instrumentation, Control Valves).</p>
<p>During Mr. Al-Qarout's career life, he has handled challenging positions wherein he has acquired his thorough practical and academic experience as the Technical Instructor, Senior Production Foreman, Panel Operator at Hydro Cracking Plant and Plant Foreman of various companies such as Mellitah Oil and Gas B.V., KNPC, Chevron, Jordan Refinery Company and Libya Oil Center.</p>	
<p>Mr. Al-Qarout has a Diploma in Chemical Engineering from the Polytechnic University in Jordan. Further, he is Certified by City & Guilds as Level 2 & 3 NVQ Processing Operations: Hydrocarbons Assessor and a Certified Instructor by Haward Technology Train-the-Trainer Program.</p>	

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	Benefits of Crude Oil Desalting <i>Economic Impact on Downstream Units • Desalting Performance Benchmarks</i>
0930 – 0945	Break
0945 – 1100	Systematic Techniques and Procedures on Crude Stabilization Operations
1100 – 1230	Break

1230 – 1245	Impact of Crude Oil Quality on Desalter Performance Impact of Crude Oil Density, Viscosity, and Asphaltenes • Crude Oil Impurities: Water, Salt and Solids
1245 - 1420	Impact of Crude Oil Quality on Desalter Performance (cont'd) Impact of Organic Acids • Desalting Heavy and Opportunity Crudes
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day One

Day 2

0730– 0900	Fundamentals of Electrical Desalting Wash Water Addition (Rate and Wash Water Quality) • Mixing/Contact (Mix Valves, Static Mixer) • Coalescence (Stoke's Law and Electrical Voltage)
0900 - 0915	Break
0915 – 1100	Fundamentals of Electrical Desalting (cont'd) Performance Control Variables • Dehydration Efficiency vs. Salt Removal Efficiency
1100 – 1230	Types of Applications Single-Stage Dehydrator • Single-Stage Desalter • Two-Stage Desalter
1230 – 1245	Break
1245 - 1420	Types of Applications (cont'd) Three-Stage Desalter • Typical Operating Conditions and Performance
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Two

Day 3

0730 – 0900	Desalter Components Process Vessel • Distribution System • Electrodes
0900 - 0915	Break
0915 – 1100	Desalter Components (cont'd) Transactor • Special Headers
1100 – 1230	Desalter Design Considerations Factors Determining Vessel Size • Factors Determining Number of Stages
1230 – 1245	Break
1245 - 1420	Desalter Design Considerations (cont'd) Factors Determining Transactor Size • Power Consumption
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Three

Day 4

0730 - 0900	Commercial Desalter Designs Howe-Baker • Petreco • Other
0900 - 0915	Break
0915 - 1100	Factors that affect Desalter Operation and Performance Crude Oil Feed Rate and Quality • Temperature/Viscosity/Density Relationships • Electrical Field Intensity •
1100 - 1230	Factors that affect Desalter Operation and Performance (cont'd) Wash Water Rate, Quality and Flow Configuration • Emulsion Formation (Pumps, Exchangers, Valves, Mixers) • Control of Water Level and Emulsion Layers
1230 - 1245	Break
1245 - 1420	Factors that affect Desalter Operation and Performance (cont'd) Demulsifier Technology and Addition Rate • Mud Washing and Brine Recycle
1420 - 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Four

Day 5

0730 - 0900	Stabilization and System Troubleshooting
0900 - 0915	Break
0915 - 1100	Troubleshooting the Desalter (cont'd) Oily Effluent • Poor Dehydration and/or Desalting
1100 - 1230	Other Electrostatic Treating Applications FCC Feed Desalting
1230 - 1245	Break
1245 - 1345	Other Electrostatic Treating Applications (cont'd) Distillate Treating
1345 - 1400	Course Conclusion Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
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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