

COURSE OVERVIEW DE0461
Artificial Lift for Engineers

Course Title

Artificial Lift Engineers

Course Date/Venue

Session 1: January 19-23, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar

Session 2: July 20-24, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar



Course Reference

DE0461



Course Duration

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 aim of this course is to introduce participants to both the physics of artificial lift technologies and the practicalities of the equipment.



This course first gives a basic overview of the artificial lift techniques commonly available today, and then goes into more detail on artificial lift techniques likely to be utilized in a typical offshore production environment. Gas lift, ESP's and jet pumps are covered in particular detail, and the course covers the principles, design, and operational aspects of each.

At the participants request, beam pumping can be covered in detail if the local environment demands this.



The course is run with a series of lectures from the trainer followed by exercises which cover the above aspects, including lift performance, gas lift valve design, optimising gas lift distribution, ESP pump design and the economics of artificial lift. The attendees are continually challenged to perform evaluations which reinforce the principles and practices of artificial lift.

Course Objectives

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

- Apply and gain an in-depth knowledge on artificial lifting design and optimization
- Explain natural flow, inflow performance, tubing flow performance and well performance, principles of gas lift
- Discuss gas lift valves and gas lift string design, operation of gas lift wells and surface facilities for gas lifts
- Optimize gas lift distribution, identify intermittent gas lifts
- Discuss the principles of electrical submersible pumps (ESP), pumps and motors, cables and surface equipment, pump design and operating ESP wells
- Explain the principles of jet pumping and jet pump design
- Manage artificial lifts

Who Should Attend

This course provides an overview of all significant aspects and considerations of artificial lifting design and optimization for engineers, supervisors and other technical staff.

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

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**.*

Course Fee


US\$ 8,500 per Delegate This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course.

Certificate Accreditations


Certificates are accredited by the following international accreditation organizations: -

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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 **3.025 CEUs** (Continuing Education Units) or **30.25 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.

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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.

Course Instructor

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:



Dr. Bassem Nabawy, Post-Doc, PhD, MSc, BSc is a **Senior Petroleum Engineer** with over **20 years** of extensive experience within the **Oil & Gas, Refinery and Petrochemical** industries. His wide experience covers **Coring & Core Analysis, Core Handling & Sample Preparation, Conventional & Special Core Analysis, Petrophysical Core Analysis, SCAL Analysis & Properties, Coring & Wellsite, Porosity & Permeability, Wettability Concepts, Petroleum Geology, Petroleum Exploration & Production, Geological**

Studies, Geophysical Characterization of Sedimentary Rocks, Petrophysical Reservoir Rocks, Rock Mechanics, Assessment of Mineral Resources, Reservoir Engineering, Carbonate Reservoir, Fractured Reservoirs, Carbonate Reservoir, Formation Evaluation & Reservoir Characterization, Petroleum Geology, Hydrogeology, Well Logging, Advanced Well Log Interpretation, Applied Well Log Interpretation, Open Hole Logs Evaluation, Pore Fabric, Applied Petrophysics, Petrographical & Geographical Studies, Microfacies Analysis, SCAL Analysis, Diagenetic Studies, Subsurface Water Equifer, Field Development Planning, Mineral Resources Assessment, Rock Mechanics, Geophysical Characterization, Sedimentary & Reservoir Rocks, Oil Exploration, Petrography, Mineralogy, SEM, Diagenetic History and Palaeoenvironment Criteria. He is currently the **Professor of Applied Research & Senior Geology Instructor** wherein he responsible in teaching and developing courses in the area of coring and core analysis, hydrogeology and petroleum geology.

Throughout his career life, Dr. Bassem has gained his practical and field experience through his various significant positions as the **Principal Investigator, Co-Principal Investigator, Associate Professor, Senior Researcher, Instructor/Trainer, Assistant Journal Editor, Treasurer, Electric Coordinator and Assistant Researcher** wherein he was greatly involved in supervising thesis for different universities as well as organized and taught experimental courses in Geology and Petrophysical properties.

Dr. Bassem has a **Postdoctoral in Petrophysics** from the **Ecole Normale Superieur, Laboratoire de Geologie, Paris, France**. Further, he has a **PhD in Petrophysics**, a **Master degree in Hydrogeology & Petroleum Geology** and a **Bachelor degree in Geology**. Further, he is a **Certified Instructor/Trainer** and **Board Member** of the Egyptian Society of Applied Petrophysics (**ESAP**) and the Society of Petrophysicists and Well Log Analysts (**SPWLA**). He has further delivered numerous trainings, courses, seminars, conferences and workshops worldwide

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	<i>Registration & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0930	Overview of Artificial Lift Techniques
0930 – 0945	<i>Break</i>
0945 – 1030	Natural Flow
1030 – 1130	Inflow Performance
1130 – 1230	Tubing Flow Performance
1230 – 1245	<i>Break</i>
1245 – 1420	Well Performance
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0930	Gas Lift
0930 – 0945	<i>Break</i>
0945 – 1030	Principles of Gas Lift
1030 – 1130	The Equilibrium Curve
1130 – 1230	Gas Lift Valves
1230 – 1245	<i>Break</i>
1245 – 1420	Gas Lift String Design
1420 – 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 – 0930	Operating Gas Lift Wells
0930 – 0945	<i>Break</i>
0945 – 1030	Surface Facilities for Gas Lift
1030 – 1130	Optimizing Lift Gas Distribution
1130 – 1230	Intermittent Gas Lift
1230 – 1245	<i>Break</i>
1245 – 1420	Electrical Submersible Pumps
1420 – 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4

0730 – 0930	Principles of Electrical Submersible Pumping
0930 – 0945	<i>Break</i>
0945 – 1030	Pumps & Motors
1030 – 1130	Cables & Surface Equipment
1130 – 1230	Pump Design
1230 – 1245	<i>Break</i>
1245 – 1420	Operating ESP Wells
1420 – 1430	Recap
1430	<i>Lunch & End of Day Four</i>



Day 5: Friday, 13th of January 2023

0730 - 0830	<i>Hydraulic Jet Pumps</i>
0830 - 0930	<i>Principles of Jet Pumping</i>
0930 - 1000	<i>Jet Pump Design</i>
1000 - 1015	<i>Break</i>
1015 - 1115	<i>Managing Artificial Lift</i>
1115 - 1130	<i>Course Conclusion</i>
1130 - 1145	POST-TEST
1145 - 1200	<i>Presentation of Course Certificates</i>
1200	<i>Lunch & End of Course</i>

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

Reem Dergham, Tel: +974 4423 1327, Email: reem@haward.org

