

COURSE OVERVIEW DE0461-4D
Artificial Lift for Engineers

Course Title

Artificial Lift for Engineers

Course Reference

DE0461-4D

Course Duration

Four days/2.4 CEUs/24 PDHs

Course Date/Venue



Session(s)	Date	Venue
1	July 22-25, 2024	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
2	October 07-10, 2024	Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

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

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, sample video clips of the instructor’s actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.

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.

Course Fee


US\$ 6,750 per Delegate + **VAT**. 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 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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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 **2.4 CEUs** (Continuing Education Units) or **24 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.

Accommodation

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

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:



Dr. Chris Kapetan, PhD, MSc, is a **Senior Petroleum Engineer** with over **30 years** of international experience within the **onshore and offshore oil & gas** industry. His wide experience covers **Decision Analytic Modelling Methods for Economic Evaluation, Probabilistic Risk Analysis (Monte Carlo Simulator) Risk Analysis Foundations, Global Oil Demand, Crude Oil Market, Global Oil Reserves, Oil Supply & Demand, Governmental Legislation, Contractual Agreements, Financial Modeling, Oil Contracts, Project Risk Analysis, Feasibility Analysis Techniques, Capital Operational Costs, Oil & Gas Exploration Methods, Reservoir Evaluation, Extraction of Oil & Gas, Crude Oil**

Types & Specifications, Sulphur, Sour Natural Gas, Natural Gas Sweetening, Petroleum Production, Field Layout, Production Techniques & Control, Surface Production Operations, Oil Processing, Oil Transportation-Methods, Flowmetering & Custody Transfer and Oil Refinery. Further, he is also well-versed in **Enhanced Oil Recovery (EOR), Electrical Submersible Pumps (ESP), Oil Industries Orientation, Geophysics, Cased Hole Formation Evaluation, Cased Hole Applications, Cased Hole Logs, Production Operations, Production Management, Perforating Methods & Design, Perforating Operations, Fishing Operations, Well & Reservoir Testing, Reservoir Stimulation, Hydraulic Fracturing, Carbonate Acidizing, Sandstone Acidizing, Drilling Fluids Technology, Drilling Operations, Directional Drilling, Artificial Lift, Gas Lift Design, Gas Lift Operations, Petroleum Business, Petroleum Economics, Field Development Planning, Gas Lift Valve Changing & Installation, Well Completion Design & Operation, Well Surveillance, Well Testing, Well Stimulation & Control and Workover Planning, Completions & Workover, Rig Sizing, Hole Cleaning & Logging, Well Completion, Servicing and Work-Over Operations, Practical Reservoir Engineering, X-mas Tree & Wellhead Operations, Maintenance & Testing, Advanced Petrophysics/Interpretation of Well Composite, Construction Integrity & Completion, Coiled Tubing Technology, Corrosion Control, Slickline, Wireline & Coil Tubing, Pipeline Pigging, Corrosion Monitoring, Cathodic Protection** as well as **Root Cause Analysis (RCA), Root Cause Failure Analysis (RCFA), Gas Conditioning & Process Technology, Production Safety and Delusion of Asphalt.** Currently, he is the **Operations Consultant & the Technical Advisor at GEOTECH** and an independent **Drilling Operations Consultant** of various engineering services providers to the international clients as he offers his expertise in many areas of the **drilling & petroleum discipline** and is well **recognized & respected** for his process and procedural expertise as well as ongoing participation, interest and experience in continuing to promote technology to producers around the world.

Throughout his long career life, Dr. Chris has worked for many international companies and has spent several years **managing technically complex wellbore interventions** in both **drilling & servicing**. He is a **well-regarded** for his **process and procedural expertise**. Further, he was the **Operations Manager at ETP Crude Oil Pipeline Services** where he was fully responsible for optimum operations of crude oil pipeline, **workover and directional drilling, drilling rigs** and equipment, drilling of various geothermal deep wells and **exploration wells**. Dr. Chris was the **Drilling & Workover Manager & Superintendent for Kavala Oil** wherein he was responsible for supervision of **drilling operations and offshore exploration**, quality control of performance of **rigs, coiled tubing**, crude oil transportation via pipeline and abandonment of **well** as per the API requirements. He had occupied various key positions as the **Drilling Operations Consultant, Site Manager, Branch Manager, Senior Drilling & Workover Manager & Engineer and Drilling & Workover Engineer, Operations Consultant, Technical Advisor** in several petroleum companies responsible mainly on an **offshore sour oil field (under water flood and gas lift)** and a gas field. Further, Dr. Chris has been a **Professor of the Oil Technology College**.

Dr. Chris has **PhD in Reservoir Engineering** and a **Master degree in Drilling & Production Engineering** from the **Petrol-Gaze Din Ploiesti University**. Further, he is a **Certified Surfaced BOP Stack Supervisor** of **IWCF**, a **Certified Instructor/Trainer**, a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management (ILM)** and has conducted **numerous short courses, seminars and workshops** and has published several technical books on **Production Logging, Safety Drilling Rigs and Oil Reservoir**.



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	<i>Overview of Artificial Lift Techniques</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Natural Flow</i>
1030 – 1130	<i>Inflow Performance</i>
1130 – 1230	<i>Tubing Flow Performance</i>
1230 – 1245	<i>Break</i>
1245 – 1330	<i>Well Performance</i>
1330 – 1420	<i>Gas Lift</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0830	<i>Principles of Gas Lift</i>
0830 – 0930	<i>The Equilibrium Curve</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Gas Lift Valves</i>
1030 – 1130	<i>Gas Lift String Design</i>
1130 – 1230	<i>Operating Gas Lift Wells</i>
1230 – 1245	<i>Break</i>
1245 – 1420	<i>Surface Facilities for Gas Lift</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 – 0830	<i>Optimizing Lift Gas Distribution</i>
0830 – 0930	<i>Intermittent Gas Lift</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Electrical Submersible Pumps</i>
1030 – 1130	<i>Principles of Electrical Submersible Pumping</i>
1130 – 1230	<i>Pumps & Motors</i>
1230 – 1245	<i>Break</i>
1245 – 1420	<i>Cables & Surface Equipment</i>
1420 – 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Three</i>

Day 4

0730 – 0830	<i>Pump Design</i>
0830 – 0930	<i>Operating ESP Wells</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Hydraulic Jet Pumps</i>
1030 – 1130	<i>Principles of Jet Pumping</i>

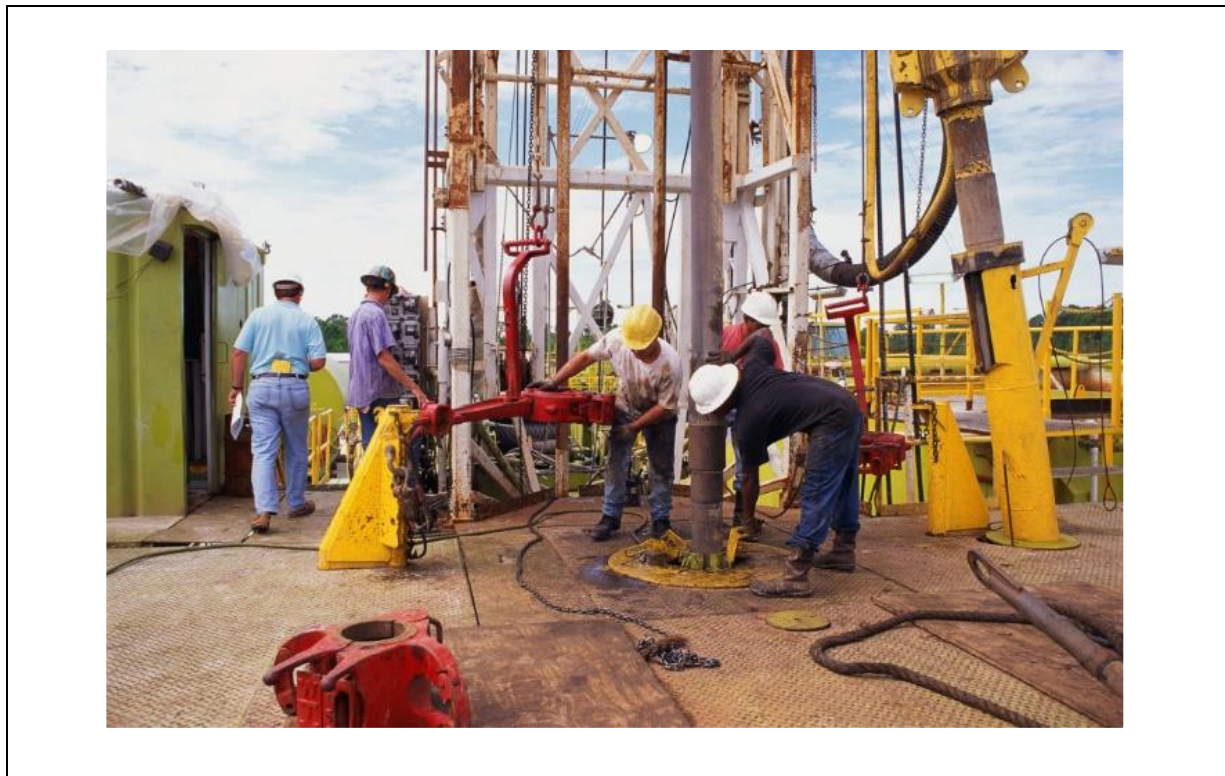




1130 – 1230	Jet Pump Design
1230 – 1245	Break
1245 – 1345	Managing Artificial Lift
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

Practical Sessions

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



Course Coordinator

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