COURSE OVERVIEW DE0128-4D
Gas Lift & ESP Operations & Optimization

Course Title
Gas Lift & ESP Operations & Optimization

Course Reference
DE0128-4D

Course Duration/Credits
Four days/2.4 CEUs/24 PDHs

Course Date/Venue

Session(s)	Date	Venue
1	August 05-08, 2024	Abu Dhabi Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
2	November 25-28, 2024	Club B Meeting Room, Ramada Plaza by Wyndham Istanbul City Center, Istanbul, Turkey

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.

This course is designed to provide participants with a detailed and up-to-date overview of Gas Lift and ESP Operations and Optimization. It covers the artificial lift methods, gas lift and ESP; the advantages and disadvantages of each method; the factors to consider when selecting an artificial lift method; the gas lift and ESP design principles and system integration; the tubing size, injection pressure, and injection depth; the gas lift and ESP optimization techniques; troubleshooting common gas lift problems and ESP problems; the advantages and disadvantages of different integration methods; the monitoring and control techniques for artificial lift systems; and the types of sensors used to monitor gas lift and ESP performance.

During the interactive course, participants will learn the control strategies to optimize production and reduce downtime; the downhole equipment used in gas lift and ESP systems; the best practices for installation and maintenance of downhole and surface equipment; troubleshooting common downhole and surface problems; the safety considerations, environmental considerations, regulatory requirements and compliance; the emerging technologies and techniques for artificial lift, including digitalization and automation; the optimization techniques to increase efficiency and production; the best practices for field development planning, including reservoir modelling and production forecasting; and the economic analysis of artificial lift projects.

Course Objectives

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

- Apply and gain an in-depth knowledge on gas lift and ESP operations and optimization
- Discuss artificial lift methods, gas lift and ESP including the advantages and disadvantages of each method and the factors to consider when selecting an artificial lift method
- Explain gas lift and ESP design principles and gas lift and ESP system integration
- Recognize tubing size, injection pressure, and injection depth
- Carryout gas lift and ESP optimization techniques as well as troubleshooting common gas lift problems and ESP problems
- Explain the advantages and disadvantages of different integration methods
- Employ monitoring and control techniques for artificial lift systems and the types of sensors used to monitor gas lift and ESP performance
- Apply control strategies to optimize production and reduce downtime including the downhole equipment used in gas lift and ESP systems
- Implement best practices for installation and maintenance of downhole and surface equipment and troubleshoot common downhole and surface problems
- Carryout safety considerations, environmental considerations, regulatory requirements and compliance
- Apply emerging technologies and techniques for artificial lift, including digitalization and automation
- Employ optimization techniques to increase efficiency and production
- Implement best practices for field development planning, including reservoir modelling and production forecasting as well as economic analysis of artificial lift projects

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 gas lift and ESP operations and optimization for petroleum, reservoir, mechanical and electrical engineers and other technical staff working with ESP systems.

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: -

- 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 **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.

- 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(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. Konstantin Zorbalas, MSc, BSc, is a **Senior Petroleum Engineer & Well Completions Specialist** with over **25 years** of **offshore** and **onshore** experience in the **Oil** & **Gas**, **Refinery** & **Petrochemical** industries. His wide expertise includes **Workovers & Completions**, **Petroleum Risk & Decision Analysis**, **Acidizing Application** in **Sandstone** & **Carbonate**, **Well Testing Analysis**, **Stimulation Operations**, **Reserves Evaluation**, **Reservoir Fluid Properties**, **Reservoir Engineering & Simulation Studies**, **Reservoir Monitoring**, **Artificial Lift Design**, **Gas Operations**, **Workover/Remedial Operations** & **Heavy Oil Technology**, **Applied Water Technology**, **Oil & Gas Production**, **X-mas Tree** & **Wellhead Operations** & **Testing**, **Artificial Lift Systems** (**Gas Lift**, **ESP**, and **Rod Pumping**), **Well Cementing**, **Production Optimization**, **Well Completion Design**, **Sand Control**, **PLT Correlation**, **Slickline Operations**, **Acid Stimulation**, **Well testing**, **Production Logging**, **Project Evaluation** & **Economic Analysis**. Further, he is actively involved in **Project Management** with special emphasis in production technology and field optimization, performing conceptual studies, economic analysis with risk assessment and field development planning. He is currently the **Senior Petroleum Engineer & Consultant** of **National Oil Company** wherein he is involved in the mega-mature fields in the Arabian Gulf, predominantly carbonate reservoirs; designing the acid stimulation treatments with post-drilling rigless operations; utilizing CT with tractors and DTS systems; and he is responsible for gas production and preparing for reservoir engineering and simulation studies, well testing activities, field and reservoir monitoring, production logging and optimization and well completion design.

During his career life, Mr. Zorbalas worked as a **Senior Production Engineer**, **Well Completion Specialist**, **Production Manager**, **Project Manager**, **Technical Manager**, **Technical Supervisor** & **Contracts Manager**, **Production Engineer**, **Production Supervisor**, **Production Technologist**, **Technical Specialist**, **Business Development Analyst**, **Field Production Engineer** and **Field Engineer**. He worked for many **world-class oil/gas companies** such as **ZADCO**, **ADMA-OPCO**, **Oilfield International Ltd**, **Burlington Resources** (later acquired by **Conoco Phillips**), **MOBIL E&P**, **Saudi Aramco**, **Pluspetrol E&P SA**, **Wintershall**, **Taylor Energy**, **Schlumberger**, **Rowan Drilling** and **Yukos EP** where he was in-charge of the **design and technical analysis** of a gas plant with capacity **1.8 billion m3/yr gas**. His achievements include **boosting oil production 17.2% per year** since 1999 using **ESP** and **Gas Lift systems**.

Mr. Zorbalas has **Master** and **Bachelor** degrees in **Petroleum Engineering** from the **Mississippi State University**, **USA**. Further, he is an **SPE Certified Petroleum Engineer**, **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**), an active member of the Society of Petroleum Engineers (**SPE**) and has numerous scientific and technical publications and delivered innumerable training courses, seminars and workshops worldwide.

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

Abu Dhabi	**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
Istanbul	**US$ 7,250** per Delegate + **VAT**. This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

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 – 0745	*Registration & Coffee*
0745 – 0800	*Welcome & Introduction*
0800 – 0815	***PRE-TEST***
0815 – 0930	***Introduction to Artificial Lift*** *Artificial Lift Methods, Including Gas Lift and ESP • Advantages and Disadvantages of Each Method • Factors to Consider when Selecting an Artificial Lift Method*
0930 – 0945	*Break*
0945 – 1030	***Gas Lift Design & Optimization*** *Gas Lift Design Principles, Including Tubing Size, Injection Pressure, and Injection Depth • Gas Lift Optimization Techniques, Including Simulation Software and Data Analysis • Troubleshooting Common Gas Lift Problems*
1030 – 1230	***ESP Design & Optimization*** *ESP Design Principles, Including Pump Selection, Motor Sizing, and Cable Selection • ESP Optimization Techniques, Including Flow Rate Optimization and Performance Monitoring*
1230 – 1245	*Break*
1245 – 1420	***ESP Design & Optimization (cont'd)*** *Troubleshooting Common ESP Problems*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 - 0830	***Gas Lift & ESP System Integration*** *Advantages and Disadvantages of Different Integration Methods*
0830 – 0930	***Gas Lift & ESP System Integration (cont'd)*** *Case Studies and Best Practices for Integration*
0930 – 0945	*Break*
0945 – 1230	***Artificial Lift Monitoring & Control*** *Monitoring and Control Techniques for Artificial Lift Systems • Types of Sensors Used to Monitor Gas Lift and ESP Performance*
1230 - 1245	*Break*
1245 – 1420	***Artificial Lift Monitoring & Control (cont'd)*** *Control Strategies to Optimize Production and Reduce Downtime*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Downhole Equipment & Maintenance*** *Downhole Equipment Used In Gas Lift and ESP Systems • Best Practices For Installation and Maintenance of Downhole Equipment*
0930 – 0945	*Break*
0945 – 1030	***Downhole Equipment &Maintenance (cont'd)*** *Troubleshooting Common Downhole Problems*
1030 – 1230	***Surface Equipment & Maintenance*** *Surface Equipment Used in Gas Lift and ESP Systems • Best Practices for Installation and Maintenance of Surface Equipment*
1230 - 1245	*Break*
1245 – 1420	***Surface Equipment & Maintenance (cont'd)*** *Troubleshooting Common Surface Problems*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	***Safety & Environmental Considerations*** *Safety Considerations for Gas Lift and ESP Operations • Environmental Considerations, Including Emissions and Water Usage • Regulatory Requirements and Compliance*
0830 – 0930	***Advanced Topics in Artificial Lift*** *Emerging Technologies and Techniques for Artificial Lift, Including Digitalization and Automation • Case Studies and Best Practices for Unconventional and Offshore Operations • Future Trends in Artificial Lift*
0930 – 0945	*Break*
0945 – 1230	***Artificial Lift Optimization & Field Development Planning*** *Optimization Techniques to Increase Efficiency and Production • Best Practices for Field Development Planning, Including Reservoir Modeling and Production Forecasting*
1230 - 1245	*Break*
1245 – 1345	***Artificial Lift Optimization & Field Development Planning (cont'd)*** *Economic Analysis of Artificial Lift Projects*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 - 1430	*Presentation of 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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