COURSE OVERVIEW DE0831-4D
Advanced Drilling, Completion and Workovers Technology

Course Title
Advanced Drilling, Completion and Workover Operations

Course Date/Venue
November 04-07, 2024/Al Aziziya Hall, The Proud Hotel Al Khobar, Al Khobar, KSA

Course Reference
DE0831-4D

Course Duration/Credits
Four days/2.4 CEUs/24 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 profitability of a well as an investment venture depends on how long it is on stream and how much it produces. Its lifetime and output are naturally due to the reservoir's initial characteristics. However, they are also dependent on keeping the well maintained in good working order and adapting completion properly to the constantly varying conditions prevailing in the reservoir and around the wellbore. The operations that may have to be carried out on a well are numerous and can be broken down into measurements, maintenance and workover.

Working on a well to reclaim or increase oil and gas production is a formidable segment of today's petroleum industry. This was not always the case, however, and many factors have changed the position of the workover industry from a minor to a major role. Foremost of these factors is that petroleum demand continues to grow, while reserves continue to decline. This difference has to be made up with existing wells, which means reworking off-production wells.

This course is designed to provide participants with up-to-date overview of the drilling and workover operations. The course covers the main factors influencing well construction, mud technology, casing design, directional drilling, completion design, the overall approach to a well's flow capacity, the major types of completion configurations, the main phases in completion, treating the pay zone, the special case of horizontal wells, the general configuration of flowing well equipment, the production wellhead, the production string or tubing, packers, downhole equipment, subsurface safety valves, servicing & workover operations, servicing & workover special cases and well stimulation.

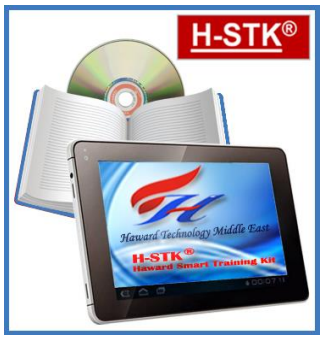
During this interactive course, participants will learn the origin of pore pressure; the drilling problems associated with abnormal pressure; the optimization of bit hydraulics, casing design process, single and multiple stage cementing; the trajectory for a directional wells; the directional drilling tools and BHA, directional surveying tools and the main factors influencing completion design; the overall approach to a well's flow capacity; the major types of completion configurations and the main phases in completion; the cement job, perforating and treating the pay zone; the general configuration of flowing well equipment, the production wellhead, the production string or tubing and packers; the down hole equipment, subsurface safety valves and running procedure; the run procedures, artificial lift process and down hole equipment for smart completion; the main types off well servicing and workover; the servicing & workover special cases; and the carbonate acidizing, sandstone acidizing, scales and paraffin removal and squeeze cementing.

Course Objectives

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

- Apply and gain an advanced knowledge in drilling, completion and workovers technology
- Discuss the origin of pore pressure as well as identify drilling problems associated with abnormal pressure, predict and confirm formation fracture pressures, select drilling fluid
- Recognize optimization of bit hydraulics, casing design process, single and multiple stage cementing
- Design the trajectory for a directional well as well as identify directional drilling tools and BHA, directional surveying tools and the main factors influencing completion design
- Explain the overall approach to a well's flow capacity, the major types of completion configurations and the main phases in completion
- Evaluate and restore the cement job as well as demonstrate perforating and treating the pay zone
- Recognize the general configuration of flowing well equipment, the production wellhead, the production string or tubing and packers
- Identify down hole equipment, subsurface safety valves and running procedure
- Perform run procedures, choose an artificial lift process and distinguish down hole equipment for smart completion, main types off well servicing and workover, servicing & workover special cases including well stimulate on methods
- Demonstrate carbonate acidizing, sandstone acidizing, scales and paraffin removal and squeeze cementing

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 is primarily designed for well engineers, drilling supervisors, reservoir engineers, geologists, production and completion engineers needing a practical understanding and an appreciation of well construction, well completion design and operation, well stimulation and intervention.

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.

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:-

- 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.

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: ***Monday, 04th November 2024***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Origin of Pore Pressures***
0930 – 0945	*Break*
0945 – 1040	***Drilling Problems Associated with Abnormal Pressures***
1040 – 1130	***Prediction & Confirmation of Formation Fracture Pressures***
1130 – 1230	***Drilling Fluid Selection***
1230 – 1245	*Break*
1245 – 1315	***Optimization of Bit Hydraulics***
1315 – 1345	***Casing Design Process***
1345 - 1420	***Single & Multiple Stage Cementing***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Tuesday, 05th November 2024***

0730 – 0815	***Designing the Trajectory for a Directional Well***
0815 – 0900	***Directional Drilling Tools & BHA***
0900 - 0930	***Directional Surveying Tools***
0930 – 0945	*Break*
0945 – 1015	***Main Factors Influencing Completion Design***
1015– 1100	***Overall Approach to a Well's Flow Capacity***
1100 – 1145	***Major Types of Completion Configurations***
1145 - 1230	***Main Phases in Completion***
1230 – 1245	*Break*
1245 – 1330	***Evaluating & Restoring the Cement Job***
1330 – 1420	***Perforating***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: ***Wednesday, 06th November 2024***

0730 – 0815	***Treating the Pay Zone***
0815 - 0900	***General Configuration of Flowing Well Equipment***
0900 - 0930	***The Production Wellhead***
0930 – 0945	*Break*
0945 – 1015	***The Production String or Tubing***
1015– 1100	***Packers***
1100 – 1145	***Down Hole Equipment***
1145 - 1230	***Subsurface Safety Valves***
1230 – 1245	*Break*
1245 – 1315	***Running Procedure***

1315 – 1345	***Choosing an Artificial Lift Process***
1345 - 1420	***Down-hole Equipment for Smart Completion***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4: ***Thursday, 07th November 2024***

0730 – 0830	***Main Types of Well Servicing & Workover***
0830 - 0930	***Servicing & Workover Special Cases***
0930 – 0945	*Break*
0945 – 1030	***Well Stimulation Methods***
1030 – 1115	***Carbonate Acidizing***
1115 – 1145	***Sandstone Acidizing***
1145 - 1230	***Scales & Paraffin Removal***
1230 – 1245	*Break*
1245 – 1345	***Squeeze Cementing***
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

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