

COURSE OVERVIEW DE0029-4D

Advanced Drilling Technology, Techniques & Optimization

Course Title

Advanced Drilling Technology, Techniques & Optimization

Course Date/Venue

Session 1: August 26-29, 2024/Boardroom 1,
Elite Byblos Hotel Al Barsha,
Sheikh Zayed Road, Dubai, UAE
Session 2: December 09-12, 2024/ Ajman
Meeting Room, Grand Millennium
Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

DE0029-4D

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.

This course is designed to provide participants with a detailed and up-to-date overview of advanced drilling technologies, techniques and optimization. It covers the problems associated with a dog leg and key seats; the new methods to improve drilling performance; how to control hole angle and the factors to consider designing packed hole assembly and stabilizing tools; controlling directional drilling and directional profile; and planning and supervising the directional well.

During this interactive course, participants will learn the subsurface serving including survey calculation and accuracy; the deflection tools and orientation and principles of directional drilling stabilization; the dog log severities and horizontal drilling; planning directional and horizontal well; the extended well reach and multi laterals, drill steam design and the factors determine optimal profile; applying better hole cleaning and enhancing hole for shake stability; and the proper calculation needed to optimize drilling such as torque and drag, cementing and well control calculations.

Course Objectives

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

- Apply and gain an advanced knowledge on drilling technology, techniques and optimization
- Identify the problems associated with a dog leg and key seats as well as new methods to improve drilling performance
- Control hole angle and recognize the factors to consider designing packed hole assembly and stabilizing tools
- Control directional drilling and discuss directional profile
- Plan and supervise directional well, and determine subsurface surveying including survey calculation and accuracy
- Identify deflection tools and discuss the principles of directional, drilling stabilization and dog leg severities
- Explain horizontal drilling and plan directional and horizontal well
- Discuss extended well reach and multi laterals, drill stem design and the factors determine optimal profile
- Apply better hole cleaning, enhance hole for shake stability and apply proper calculation needed to optimize drilling such as torque and drag, cementing and well control calculations

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 advanced drilling technology, techniques and optimization for drilling engineers, drilling engineering supervisors, drilling operations section leaders, tool pushers, managers, well engineers and technical support personnel.

Training Methodology

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Workshops & Work Presentations
- 30% Case Studies & Practical Exercises
- 20% Software, Simulators & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

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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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.

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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. Abia Rhouma, PhD, MSc, BSc, is a **Senior Drilling & Petroleum Engineer** with extensive years of experience within the **Oil & Gas, Refinery and Petroleum** industries. Her expertise lies extensively in the areas of Advanced **Drilling Technology, Petroleum Engineering, Drilling Operations, Directional Drilling & Surveying, Horizontal & Directional Drilling, Drilling Optimization & Well Planning, Drilling Operation Management, Drill Bit & Drilling Hydraulics, Drilling & Production Equipment, Extended Reach Drilling, Coiled Tubing**

Operations, Coiled Tubing Technology, Coiled Tubing Design, Rock Mechanics, Rock Physics, Seismic Sequence Stratigraphy, Applied Reservoir Engineering & Management, Naturally Fractured Reservoirs, Practical Reservoir Engineering, Steam Flood Reservoir Management, 3D Reservoir Modelling, Reservoir Surveillance & Management, Integrated Reservoir Characterization, Naturally Fractured Reservoir Engineering, Drilling Fluids Technology, Surface BOP Stack, Hydraulic Fracturing, Decline Curve Analysis, Cementing & Casing, Oil & Gas Fields Operations, Rig System, Reservoir Simulation, Enhancing Production System, Drilling & Hydraulic Fracture, Technical Writing in Drilling Fluid, Reservoir Fluids, Oil Analysis, Formation Evaluation (PVT), Bottom Hole, Wellbore Friction & Surface Pressures, Step Rate Tests/Dfit Analysis, Friction Pressures, Tortuosity versus Perforations, Estimated Leak-Off & Pre-Treatment Frac Gradients, Water Analysis, Benchtop Pilot Testing, Linear & Hybrid Borate & Zirconate Gel Systems, Real-Time Fluid Analysis & Management, Drilling Fluid, Reservoir Fluid & Well Testing, Gas Measurement & Formation Evaluation (PVT), Petroleum Design Processing, Workover & Completion, Well Head Equipment, Oilfield Operation, Hydraulic Fracture and Drilling & Completion Engineering. She has also experience with some of the software's like the Eclipse, Fracpro, Ansys Fluent, Cemstress, Paso, Gohfer, Cemcat, Sas, CMG and modeling Proppant Transport using Ansys Fluent Software. She is currently the **Procurement Department Director** of **ALPHA Engineering Int'l.**, wherein she is involved in developing and executing a long-term strategy to facilitate improvements for procurement services.

During Dr. Abia's career life, she has gained his practical and field experience through his various significant positions as the **Operations Manager, Business Development Manager, Client Relation Manager, Senior Petroleum Engineer, Lead Cement Engineer, Drilling & Hydraulic Fracture Engineer, Hydraulic Fracturing Field Engineer II, Frac Engineer, Drilling Engineer, Cementing Technical Engineer, Cementing Field Engineer, QA Supervisor, Supervisor, Chemistry Lab Technician, Head of Teacher Assistance & Research Assistance** and Intern for numerous international companies such as the **Schlumberger, ConocoPhillips, Energen, Quality Repair & Modeling LLC, Liberty Oilfield Services, Sahara Chemical Solutions, Colorado School of Mines, Start Scientific Inc., MSI Oil Service and Total Oil & Gas.**

Dr. Abia has **PhD, Master and Bachelor** degrees in **Petroleum Engineering** from the **Colorado School of Mines** and the **Missouri University of Science & Technology, USA** respectively. Further, she is a **Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership and Management (ILM)**, and a member of the **Society of Petroleum Engineers (SPE) International** and **American Association of Drilling Engineers (AADE)**. She has further published scientific papers and delivered numerous trainings, workshops and conferences worldwide.

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 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	<i>Registration & Coffee</i>
0745 – 0800	<i>Welcome & Introduction</i>
0800 – 0815	PRE-TEST
0815 – 0930	<i>Introduction to Advanced Drilling Technology & Application for Drilling</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Problems Associated with a Dog Leg & Key Seats</i>
1030 – 1130	<i>New Methods to Improve Drilling Performance</i>
1130 – 1230	<i>How Do We Control Hole Angle</i>
1230 – 1245	<i>Break</i>
1245 – 1420	<i>Factors to Consider Designing Packed Hole Assembly</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0830	<i>Packed Hole Assemblies</i>
0830 – 0930	<i>Stabilizing Tools</i>
0930 – 0945	<i>Break</i>
0945 – 1030	Conclusion
1030 – 1130	<i>Introduction to Control Directional Drilling</i>
1130 – 1230	<i>Directional to Profile</i>
1230 – 1245	<i>Break</i>
1245 – 1330	<i>Planning & Supervising the Directional Well</i>
1330 – 1420	<i>Subsurface Servicing, Including Survey Calculation & Accuracy</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 – 0930	<i>Deflection Tools</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Orientation, Deflection Tools</i>
1030 – 1130	<i>Principles of Directional, Drilling Stabilization</i>
1130 – 1230	<i>Dog Log Severities</i>
1230 – 1245	<i>Break</i>
1245 – 1330	<i>Introduction to Horizontal Drilling</i>
1330 – 1420	<i>Planning Directional & Horizontal Well</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4

0730 – 0830	<i>Extended Well Reach & Multi Laterals</i>
0830 – 0930	<i>Introduction to Drills Steam Design</i>
0930 – 0945	<i>Break</i>
0945 – 1045	<i>Proper Drill Steam Design</i>
1045 – 1130	<i>Factors Determine Optimal Profile</i>
1130 – 1230	<i>Better Hole Cleaning</i>
1230 – 1245	<i>Break</i>
1245 – 1330	<i>Enhancing Hole for Shake Stability</i>
1330 – 1345	<i>Calculation Needed to Know to Optimize Drilling such as Torque & Drag, Cementing & Well Control Calculations</i>
1345 – 1400	<i>Course Conclusion</i>
1400 – 1415	<i>POST-TEST</i>
1415 – 1430	<i>Presentation of Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

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



Course Coordinator

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