



COURSE OVERVIEW DE0197 Drilling Optimization

Course Title
Drilling Optimization

Course Reference
DE0197

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Date/Venue



Session(s)	Date	Venue
1	April 14-18, 2024	Jubail Hall, Signature Al Khobar Hotel, Al Khobar, KSA
2	June 30-July 04, 2024	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
3	September 01-05, 2024	Business Center, Concorde Hotel Doha, Doha, Qatar
4	November 04-08, 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.



This course is designed to provide participants with a detailed and up-to-date overview of drilling optimization. It covers the risk analysis, technical limit and techniques to quantum change limits; the key performance indicators (KPI) and the impact of wellbore stability; the drill string mechanics, well design concepts and well construction design to wellsite operations; the drilling fluid calculations, directional drilling and measurement while drilling systems (MWD); and the controllable and non-controllable non-production time (NPT).



Further, the course will also discuss the performance limitations, stuck pipe refresher, measurements and technology enablers; the ROP monitoring and improvement techniques; the typical drilling plan and drilling optimization; the optimization elements and petroleum rock mechanics; the wellbore stability analysis, rock strength and rock failure; the cost-time analysis, common drilling problems, limit state function and probability failure function; and the process optimization and rate of penetration monitoring.

During this interactive course, participants will learn the technical limits and quantum change in limits; the advanced drilling techniques; the software tools, well site parameters and drill string inventory optimization; the use of kill sheets; and the task analysis.

Course Objectives

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

- Apply systematic techniques on drilling problems and optimization
- Discuss the basics of drilling operations optimization
- Carryout risk analysis, technical limit identification and techniques to quantum change limits
- Recognize key performance indicators (KPI) and the impact of wellbore stability
- Discuss drill string mechanics, well design concepts and well construction design to wellsite operations
- Employ drilling fluid calculations, directional drilling and measurement while drilling systems (MWD)
- Differentiate controllable and non-controllable non-production time (NPT)
- Determine performance limitations, stuck pipe refresher, measurements and technology enablers
- Apply ROP monitoring and improvement techniques as well as typical drilling plan and drilling optimization
- Identify optimization elements and petroleum rock mechanics
- Carryout wellbore stability analysis and identify rock strength and rock failure
- Illustrate cost-time analysis and recognize the common drilling problems, limit state function and probability failure function
- Optimize process and monitor the rate of penetration
- Determine technical limits and quantum change in limits as well as apply advanced drilling techniques
- Recognize software tools, well site parameters and drill string inventory optimization
- Use kill sheets as well as apply task analysis and lessons learned

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 covers systematic techniques on drilling problems and optimization for those who are working in the field of well engineering, oil and gas exploration, geology and reservoir modelling.

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 Fee

Al Khobar	US\$ 8,000 per Delegate + VAT . This rate includes H-STK [®] (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Dubai	US\$ 8,000 per Delegate + VAT . This rate includes H-STK [®] (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Doha	US\$ 9,000 per Delegate. This rate includes H-STK [®] (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Abu Dhabi	US\$ 8,000 per Delegate + VAT . This rate includes H-STK [®] (Haward Smart Training Kit), buffet lunch, coffee/te 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.

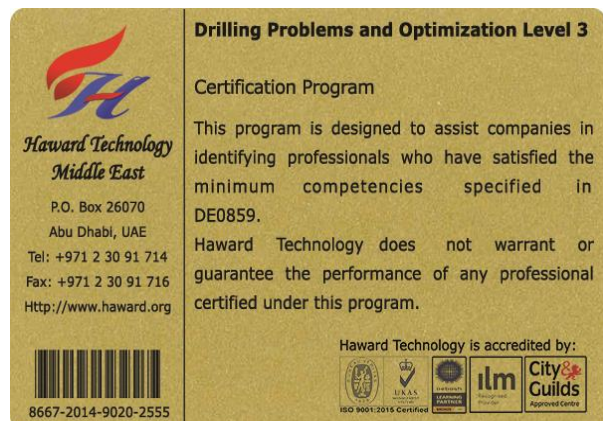
Course Certificate(s)

- (1) Internationally recognized Wall Competency Certificates and Plastic Wallet Card Certificates will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-





- (2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course

* Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology * CEUs * Haward Technology *



Haward Technology Middle East
Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-21

HTME No. 8667-2014-9020-2555

Participant Name: Abdulsatar Al Otaibi

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
DE0859	Drilling Problems and Optimization Level 3	10 Nov-14 Nov, 2021	32.5	3.25

Total No. of CEU's Earned as of TOR Issuance Date **3.25**

TRUE COPY

Jaryl Castillo
Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Hemdon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2013 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 Association 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 is accredited by




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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 **3.0 CEUs** (Continuing Education Units) or **30 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(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. Hossam Mansour is a **Senior Drilling & Petroleum Engineer** with almost **25 years** of **Offshore & Onshore** experience within the **Refinery, Petroleum and Oil & Gas** industries. His expertise covers the areas of **Advanced Drilling Practices, Horizontal & Directional Drilling** (Planning, Techniques & Procedures), **Horizontal & Multilateral Drilling, Directional & Horizontal Drilling Techniques & Procedures, Directional Drilling, Horizontal & Multilateral Drilling,**

Advanced Drilling Technology, Drilling & Workover Operations, Offshore Drilling & Testing, Drilling & Completion Fluids, Extended Reach Drilling (ERD), Cementing Operations, Cementing Equipment, Cement Slurry Volumes, Casing, Directional & Horizontal Well (Planning, Techniques & Procedures), **Horizontal & Multilateral Wells, Horizontal Well Control, Horizontal & Multilateral Wells** (Analysis & Design), **Directional, Horizontal Well Performance & Optimization, Geological & Engineering Aspects of Horizontal Wells, Sucker Rod Pumping System, SRP Maintenance, Rod Pumping Optimization, Rod Lift Method, Beam Pump, Well Production Control & Management, Rigging, Tubular Handling, HPHT, Well Stimulation, Well Cleaning, Well Testing Analysis & Design, Well Control, Well Reconciliation, Drilling Water Wells Design & Operations, Coiled Tubing Perforating Operations, Gas Lift Operations, ESP Design & Operation, Tubing, Well Heads, Drill Stem Test (DST) Operations, Offshore Drilling and Drill String.** Further, he is also a well-versed in **Workover Rigs, Open & Cased Hole Logging, Wire Line Perforations, FRAC Design & Operations, Log Interpretation, Stuck Pipe Prevention, Fishing Operations, Tools & BHA Design and Rig & Rigless Completion Operations.** He is currently the **Operations General Manager of IPR Energy Group-International Oilfield Services,** where-in he is managing, planning, directing and coordinating the operations of companies and responsible for formulating policies, managing daily operations and planning the use of materials.

During his career life, Mr. Mansour held significant positions such as the **Operations General Manager, Drilling Engineering Manager, Drilling Superintendent, Drilling & Workover Superintendent, Senior Drilling Supervisor, Drilling & Workover Supervisor, Night Drilling Supervisor, Land Rig Drilling Supervisor, Senior Drilling Engineer, Senior Drilling Consultant, Trainer/Instructor and Cement Operator** for numerous international companies like the **Saudi ARAMCO, PetroSannan-JV NaftoGaz, PetroShahd, ENAP Sipetrol, NAFTOGAZ, Romanna, Apache, Khalda Petroleum Company, RWE Dea AG Co., SUCO (Suez Oil Company) and Halliburton.**

Mr. Mansour has a **Bachelor** degree in **Petroleum Engineering** with the major in **Drilling, Production & Reservoir.** Further, he is a **Certified Instructor/Trainer** and a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM).** Moreover, he is a member of the **Society of Petroleum Engineers (SPE)** and has delivered innumerable technical courses, related sciences and studies, seminars, workshops and conferences 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	Registration & Coffee
0800 - 0815	Welcome & Introduction
0815 - 0830	PRE-TEST
0830 - 0930	Risk Analysis
0930 - 0945	Break
0945 - 1015	Technical Limit Identification: Techniques to Quantum Change Limits
1015 - 1045	Key Performance Indicators (KPI)
1045 - 1115	Impact of Wellbore Stability
1115 - 1145	Drill String Mechanics
1145 - 1215	Well Design Concepts
1215 - 1230	Break
1230 - 1330	Well Construction Design to Wellsite Operations
1330 - 1420	Drilling Fluid Calculations
1420 - 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 - 0845	Directional Drilling
0845 - 0930	Measurement While Drilling Systems (MWD)
0930 - 0945	Break
0945 - 1030	Controllable & Non-controllable Non-production Time (NPT)
1030 - 1100	Performance Limitations
1100 - 1215	Stuck Pipe Refresher
1215 - 1230	Break
1230 - 1420	Measurements & Technology Enablers
1420 - 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 - 0845	ROP Monitoring & Improvement Techniques
0845 - 0930	Typical Drilling Plan
0930 - 0945	Break
0945 - 1030	Introduction to Drilling Optimization
1030 - 1115	Optimization Elements
1115 - 1215	Petroleum Rock Mechanics
1215 - 1230	Break
1230 - 1420	Wellbore Stability Analysis
1420 - 1430	Recap
1430	Lunch & End of Day Three



Day 4: Wednesday, 15th of March 2023

0730 - 0845	<i>Rock Strength & Rock Failure</i>
0845 - 0930	<i>Cost-time Analysis</i>
0930 - 0945	<i>Break</i>
0945 - 1030	<i>Common Drilling Problems</i>
1030 - 1115	<i>Limit State Function & Probability Failure Function</i>
1115 - 1215	<i>Optimization of a Process & its Elements</i>
1215 - 1230	<i>Break</i>
1230 - 1420	<i>Rate of Penetration Monitoring</i>
1420 - 1430	<i>Recap</i>
1430	<i>Lunch & End of Day Four</i>

Day 5: Thursday, 16th of October 2023

0730 - 0845	<i>Technical Limits & Quantum Change in Limits</i>
0845 - 0930	<i>Advanced Drilling Techniques</i>
0930 - 0945	<i>Break</i>
0945 - 1030	<i>Software Tools</i>
1030 - 1115	<i>Well Site Parameters & Drill String Inventory Optimization</i>
1115 - 1215	<i>Kill Sheets Use</i>
1215 - 1230	<i>Break</i>
1230 - 1315	<i>Task Analysis & Lessons Learned</i>
1300 - 1315	<i>Course Conclusion</i>
1315 - 1415	COMPETENCY EXAM
1415 - 1430	<i>Presentation of Course 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

Kamel Ghanem, Tel: +971 2 30 91 714, Email: kamel@haward.org

