

COURSE OVERVIEW DE0197 Drilling Optimization

Course Title

Drilling Optimization

Course Date/Venue

Session 1: January 26-30, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar

Session : July 27-31, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar

Course Reference

DE0197

Course Duration/Credits

Five days/3.0 CEUs/30 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 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, 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 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

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\$ 8,500 per Delegate, 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.

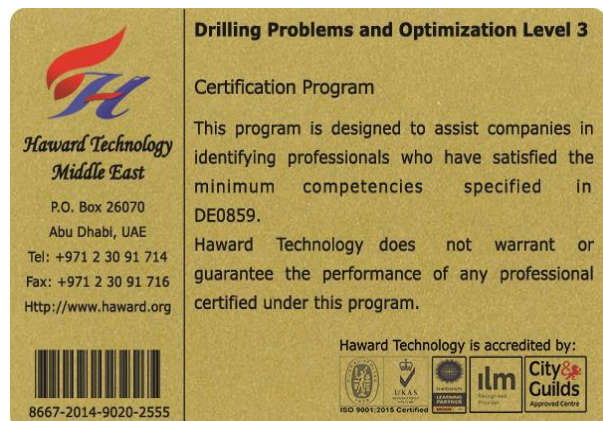
Course Certificate(s)

(1) Internationally recognized Competency Certificates and Plastic Wallet Cards 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)

CEUs

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.

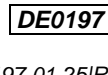
Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking Continuing Education Units (CEUs) in accordance with the rules & regulations of the International Association for Continuing Education & Training (IACET). IACET is an international 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:

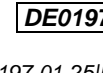


Mr. Konstantin Zorbalas (Konstantinos Zorbalas), MSc, BSc, is a Senior Petroleum Engineer & Well Completions Specialist with 35 years of offshore and onshore experience in the Oil & Gas, Refinery & Petroleum industries. His wide expertise includes OIP Estimation & Range of Uncertainty, Waterflood Management, Water Flooding, Water Flooding & Reservoir Sourcing Issues, Water Flooding, Reservoir Souring & Water Breakthrough, Well & Reservoir Management and Monitoring, Fishing Operations, Drilling & Work-Over

Operations, Workover Best Practices, Well Testing, Completion Design & Operation, Well Stimulation and Workover, Well Stimulation & Workover Planning, Well Completion, Servicing & Work-Over Operations, Completions & Workover, HSE in Work-Over & Drilling Operations, Well Testing Completion & Workover, Basic Drilling, Completion & Workover Operations, Advanced Drilling, Completion & Workovers Fluids, Cementing Integrity Evaluation, Cementing Design, Cement Integrity Assurance & Evaluation, Basic Cementing (Operations) & Basic Acidizing, Advanced Cementing Technology, Casing & Cementing, Advanced Cementing & Stimulation, Artificial Lift Systems, New Technology in Artificial Lift Systems, Artificial Lift Methods, Crude Oil Artificial Lift Operations, Artificial Lift Systems, Artificial Lift & Challenges, Artificial Lift Systems & Optimization Technology, Production Optimization with Artificial Lift System, Well Integrity & Artificial Lift, Formation Damage & Flow Assurance Issues, Formation Damage Evaluation, Prevention, Remediation & Control, Formation Damage (Causes, Prevention & Remediation), Well Completion Design & Operations, Crude Oil Market, Oil Reserves, Global Oil Supply & Demand, Government Legislation & Oil Contractual Agreements, Oil Projects & Their Feasibility (Revenue and Profitability), Oil & Gas Exploration and Methods, Oil & Gas Extraction, Oil Production & Refining, Technology Usage in Industrial Security; Oil & Gas Economics Modelling Evaluation Decision Making & Risk Analysis, Economic Evaluation & Global Profitability Criteria, Petroleum Economics, Fluid Properties & Phase Behaviour (PVT), Workovers & Completions, Acidizing Application in Sandstone & Carbonate, Well Testing Analysis, Reserves Evaluation, Reservoir Fluid Properties, Reservoir Monitoring, Heavy Oil Technology, Applied Water Technology, X-mas Tree & Wellhead Operations & Testing, Artificial Lift Systems (Gas Lift, ESP, and Rod Pumping), Well Cementing, Well Completion Design, Slickline Operations, Cased Hole Logging and Production Logging. 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 Abu Dhabi National Oil Company (ADNOC) Group of companies wherein he is involved in the megamature 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, Trainer, 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's and Bachelor's 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

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

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

Day 5

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

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