COURSE OVERVIEW DE0197
Drilling Optimization

Course Title
Drilling Optimization

Course Date/Venue
July 27-31, 2025/Meeting Plus TBA, City Centre Rotana Doha, 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 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.

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: -

- 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.

- 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.

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. Chris Kapetan, PhD, MSc, is a **Senior Petroleum Engineer** with over **30 years** of international experience within the **onshore** and **offshore oil** & **gas** industry. His wide experience covers **Asset Management** Principles, Risks & Economics, **Petroleum Economics**, **Decision Analytic Modelling Methods** for **Economic Evaluation**, **Probabilistic Risk Analysis** (**Monte Carlo Simulator**) **Risk Analysis Foundations**, **Global Oil Demand**, Crude Oil Market, Global Oil Reserves, Oil Supply & Demand, Governmental Legislation, Contractual Agreements, **Financial** Modeling, **Oil Contracts**, **Project Risk Analysis**, **Feasibility Analysis** Techniques, **Capital Operational Costs**, Oil & Gas Exploration Methods, **Reservoir** Evaluation, **Extraction of Oil & Gas**, **Crude** Oil Types & Specifications, Sulphur, Sour Natural Gas, **Natural Gas Sweeting**, **Petroleum Production**, Field Layout, **Production** Techniques & Control, **Surface Production** Operations, **Oil Processing**, Oil Transportation-Methods, **Flowmetering & Custody Transfer** and **Oil Refinery**. Further, he is also well-versed in Enhanced Oil Recovery (**EOR**), Electrical Submersible Pumps (**ESP**), **Oil Industries Orientation**, **Geophysics**, Cased Hole **Formation Evaluation**, Cased Hole **Applications**, Cased Hole **Logs**, Production **Operations**, Production **Management**, Perforating **Methods & Design**, Perforating **Operations**, **Fishing** Operations, **Well & Reservoir** Testing, **Reservoir Stimulation**, **Hydraulic Fracturing**, **Carbonate** Acidizing, **Sandstone** Acidizing, **Drilling Fluids Technology**, Drilling **Operations**, **Directional** Drilling, **Artificial Lift**, **Gas Lift Design**, **Gas Lift Operations**, **Petroleum Business**, **Field Development Planning**, **Gas Lift Valve** Changing & Installation, **Well Completion** Design & Operation, Well **Surveillance**, Well **Testing**, Well **Stimulation** & **Control** and **Workover Planning**, **Completions** & **Workover**, **Rig Sizing**, **Hole Cleaning** & **Logging**, **Well Completion**, **Servicing** and **Work-Over Operations**, Practical **Reservoir Engineering**, **X-mas Tree & Wellhead** Operations, Maintenance & Testing, **Advanced Petrophysics/Interpretation** of **Well Composite**, **Construction Integrity** & **Completion**, **Coiled Tubing Technology**, **Corrosion Control**, **Slickline**, **Wireline & Coil Tubing**, **Pipeline Pigging**, **Corrosion Monitoring**, **Cathodic Protection** as well as Root Cause Analysis (**RCA**), Root Cause Failure Analysis (**RCFA**), **Gas Conditioning & Process Technology**, **Production Safety** and **Delusion of Asphalt**. Currently, he is the **Operations Consultant** & the **Technical Advisor** at **GEOTECH** and an independent **Drilling Operations Consultant** of various engineering services providers to the international clients as he offers his expertise in many areas of the **drilling & petroleum discipline** and is well **recognized & respected** for his process and procedural expertise as well as ongoing participation, interest and experience in continuing to promote technology to producers around the world.

Throughout his long career life, Dr. Chris has worked for many international companies and has spent several years **managing** technically **complex wellbore interventions** in both **drilling** & **servicing**. He is a **well-regarded** for his **process** and **procedural expertise**. Further, he was the **Operations Manager** at **ETP Crude Oil Pipeline Services** where he was fully responsible for optimum operations of crude oil pipeline, **workover** and **directional drilling**, **drilling rigs** and equipment, drilling of various geothermal deep wells and **exploration wells**. Dr. Chris was the **Drilling** & **Workover Manager** & **Superintendent** for **Kavala Oil** wherein he was responsible for supervision of **drilling operations** and **offshore exploration**, quality control of performance of **rigs**, **coiled tubing**, crude oil transportation via pipeline and abandonment of **well** as per the API requirements. He had occupied various key positions as the **Drilling Operations Consultant**, **Site Manager**, **Branch Manager**, **Senior Drilling** & **Workover Manager** & **Engineer** and **Drilling** & **Workover Engineer**, **Operations Consultant**, **Technical Advisor** in several petroleum companies responsible mainly on an **offshore** sour oil field (under water flood and gas lift) and a gas field. Further, Dr. Chris has been a **Professor** of the **Oil Technology College**.

Dr. Chris has **PhD** in **Reservoir Engineering** and a **Master's** degree in **Drilling & Production Engineering** from the **Petrol-Gaze Din Ploiesti University**. Further, he is a **Certified Surfaced BOP Stack Supervisor** of **IWCF**, a **Certified Instructor/Trainer**, a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management** (**ILM**) and has conducted **numerous short courses**, **seminars** and **workshops** and has published several technical books on **Production Logging**, **Safety Drilling Rigs** and **Oil Reservoir**.

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 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: ***Sunday, 27th of July 2025***

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: ***Monday, 28th of July 2025***

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: ***Tuesday, 29th of July 2025***

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, 30th of July 2025***

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

Day 5: ***Thursday, 31st of July 2025***

0730 – 0845	***Technical Limits & Quantum Change in Limits***
0845 – 0930	***Advanced Drilling Techniques***
0930 – 0945	*Break*
0945 – 1030	***Software Tools***
1030 – 1115	***Well Site Parameters & Drill String Inventory Optimization***
1115 – 1215	***Kill Sheets Use***
1215 – 1230	*Break*
1230 – 1345	***Task Analysis & Lessons Learned***
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

Reem Dergham, Tel: +974 4423 1327, Email: reem@haward.org