COURSE OVERVIEW DE0852
Advanced Drilling Practices

Course Title
Advanced Drilling Practices



Course Date/Venue
Session 1: June 13-17, 2027/Meeting Plus 9, City Centre Rotana Doha Hotel, Doha, Qatar
Session 2: November 07-11, 2027/Meeting Plus 9, City Centre Rotana Doha Hotel, Doha, Qatar

3.0 CEUs (30 PDHs) AWARD

Course Reference
DE0852

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 for engineers and field personnel involved in the planning and implementation of drilling programs. The course covers all aspects of drilling technology, emphasizing both theory and practical application. Today's drilling personnel must have a working knowledge of all these disciplines in order to effectively drill a well.

The course provides all the fundamentals necessary to drill a well whether it is a shallow well or a complex, high pressure well. Computer programs are used to design many aspects of the modern well and the course will provide the participants with the theory behind most programs along with practical implementation. Course will also include advanced Mud Logging principles and operations.

Further, the course will also discuss the drilling process, drilling sequence, BHA design and PDC bit design; the rheology models, filtration control, open hole logging and cased hole logging; the components of BHA design; the stuck pipe, fishing operations and tools; the side track operations including whip stock technique and safety alerts; and the sticking mechanisms and drilling practices.

Course Objectives/Outcomes & Benefits for the Participants

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

- Apply and gain an advanced knowledge on drilling practices
- Specialized knowledge and understanding in standard HSE procedures at the rig site
- Specialization in cost control, evaluating alternative drilling methods
- Demonstrate specialized knowledge and understanding of Hydraulics
- Constituents of Drilling fluids and its function, pressure losses in the circulating system and ECD
- Specialized knowledge in bit selection and dull bit grading
- Specialized knowledge and understanding in casing and drill string design, selection of casing seats, BOP equipment
- Demonstrate knowledge and understanding in cement slurry design
- Specialized knowledge in directional and horizontal drilling
- Project cost analysis
- Demonstrate specialized knowledge and understanding of wellbore pressure and different well controls for different scenarios
- Ability to coach others
- Drill a well cost effectively and maximize penetration rate
- Evaluate stuck pipe problems and avoid potential problems by optimizing hole cleaning and ROP
- Design, drill string and BOP/wellheads
- Design and implement bit and hydraulics programs
- Recognize and evaluate well control problems by effectively using Mud Logging principles and techniques
- Illustrate drilling process, drilling sequence, BHA design and PDC bit design
- Describe rheology models and apply filtration control, open hole logging and cased hole logging
- Identify the components of BHA design as well as stuck pipe, fishing operations and tools
- Carryout side track operations including whip stock technique and safety alerts
- Recognize sticking mechanisms and apply drilling practices

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 provides an advanced overview on drilling practices for senior engineers, field and drilling personnel, drilling engineering supervisors, drilling operations section leaders, tool pushers, managers, well engineers and other technical staff who are involved in the planning and implementation of drilling programs.

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

Haward's 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**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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 **Decision Analytic Modelling Methods** for **Economic Evaluation**, **Probabilistic Risk Analysis** (**Monte Carlo Simulator**) **Risk Analysis Foundations**, **Global Oil Demand**, Crude Oil Market, Global Oil Reser ves, 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**, **Petroleum Economics**, **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** 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

Our courses employ an interactive, learner-centred methodology that integrates theoretical knowledge with practical application. The training is delivered through a suitable combination of some or all of the following methods, selected according to the course content and learning objectives:

- Instructor-led presentations and facilitated discussions
- Practical workshops and participant presentations
- Hands-on exercises and real-world case studies
- Equipment demonstrations and technical drawings
- Hardware- and software-based simulations
- Gamification & Role Play in soft-skills courses only
- Virtual Reality (VR) and Augmented Reality (AR)
- Instructional videos and other relevant training resources

This blended approach encourages active participation, strengthens practical skills and supports the effective application of acquired knowledge in the workplace.

Learning Design & Customization

This course can be customized to the exact requirements of clients. Haward Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

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.

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	***Drilling Process*** *Drilling Services • Drilling Sequence • BHA Design & Components • Drilling Rig • Directional & Horizontal Drilling • History of PDC's • Main Features of PDC's • PDC Bit Design • Body Material • Bit Profile*
0930 – 0945	*Break*
0945 – 1100	***Drilling Process (cont'd)*** *Bit Selection & Dull Bit Grading • Gauge Protection • Cutter Shape • Hydraulics • Uses of PDC Bits • Other Application of PDC Bits • Limitations of PDC Bits • Possible PDC Bit Improvements • Well Types • Site Preparation*

1100 – 1215	***Drilling Process (cont'd)*** *Standard HSE Procedures at the Rig Site • Drilling Sequence • Cost Control & Evaluating Alternative Drilling Methods • Constituents of Drilling Fluids & its Function, Pressure Losses in the Circulating System and ECD • Cementing Equipment • Cement Slurry Design • Viscosity – Simple Definition • Viscosity – Importance • Viscosity – Technical Definition • Shear rate – Definition*
1215 – 1230	*Break*
1230 – 1420	***Drilling Process (cont'd)*** *Shear Stress/Shear Rate Illustration • Plastic Viscosity – Definitions • Causes of Plastic Viscosity Changes • Methods to Decrease Plastic Viscosity • Yield Point – Definitions • Causes of Yield Point Increases • Methods for Decreasing Yield Points • Gel Strength – Definition • Gel Strength – Importance*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Rheology Models*** *Newtonian Fluids • Non-Newtonian Fluids • Rheological Models • Bingham Plastic Equation • Bingham Plastic Model • Power Law Equation*
0930 – 0945	*Break*
0945 – 1100	***Rheology Models (cont'd)*** *Power Law Model • n Value • "n" Value Relationships • K Value • "K" Value Relationships • Power Law Model Weakness*
1100 – 1230	***Filtration Control*** *Filtration Control Importance • Filtration Control Types • Static Filtration Characteristics • Dynamic Filtration Characteristics • Fluid Loss Measurement Static (API) • Fluid Loss – Static (HTHP)*
1230 – 1245	*Break*
1245 – 1420	***Filtration Control (cont'd)*** *Fluid Loss Measurement Static HT-HP • API vs HT-HP • Dynamic HT-HP • Darcy's Law • Relationship of Filtrate Volume vs Times • Filter Cake Quality • Filter Cake Materials – Beneficial*
1420 – 1430	*Recap*
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Logging Services*** *Open Hole Logging • Cased Hole Logging*
0930 – 0945	*Break*
0945 – 1100	***BHA Design*** *BHA Design (Components) • Project Cost Analysis • Drill a Well Cost Effectively & Maximize Penetration Rate • Wellbore Pressure & Different Well Controls for Different Scenarios*
1100 – 1230	***Stuck Pipe*** *Stuck Pipe Introduction • Sticking Mechanism • Evaluate Stuck Pipe Problems & Avoid Potential Problems by Optimizing Hole Cleaning & ROP*
1230 – 1245	*Break*

1245 – 1420	***Fishing Operations & Tools*** *Casing & Drill String Design • Selection of Casing Seats • BOP Equipment • Design, Drill String & BOP/Wellheads • Design & Implement Bit & Hydraulics Programs*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0930	***Side Track Operations (Including Whip Stock Technique)***
0930 – 0945	*Break*
0945 – 1100	***Safety Alerts***
1100 – 1230	***Sticking Mechanisms*** *Unconsolidated Formations • Mobile Formations • Fracture and Faulted Formations • Naturally Over-pressure Shale Collapse • Induced Over-Pressured Shale Collapse • Reactive Formations • Hole Cleaning • Techtonically Stressed Formations • Solids Induced Pack-Off*
1230 – 1245	*Break*
1245 – 1420	***Drilling Practices – Different Problems Linked with Actual Case Studies*** *Drilling Problems • AEB-3 Problem & Required Fishing Operations*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0930	***Drilling Practices – Actual Drilling Well Case Study*** *Introduction • Alamein Field • Well NEAL-21 Summary • Well NEAL-21 Summary – Lithology Column CSG Design*
0930 – 0945	*Break*
0945 – 1100	***Drilling Practices – Actual Drilling Well Case Study (cont'd)*** *NEAL # 21 Drilling History • NEAL # 21 Drilling Parameters (12 ¼" OH) • NEAL # 21 Drilling History - 8 ½" Vertical Section • NEAL # 21 Drilling Parameters (8 ½" OH)*
1100 – 1230	***Drilling Practices – Actual Drilling Well Case Study (cont'd)*** *NEAL # 21 OHL, 7" Liner W/ CMT & CBL-VDL-GR-CCL • NEAL # 21 (WBS, CSG & CMT Summary) • NEAL # 21 Progress Charts (Time VS Depth) • NEAL # 21 Progress Charts (Cost VS Depth)*
1230 – 1245	*Break*
1245 – 1345	***Coach Others***
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

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