

COURSE OVERVIEW DE0780
Drilling Fluids

Course Title
 Drilling Fluids

Course Reference
 DE0780

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

Course Date/Venue



Session(s)	Date	Venue
1	March 03-07, 2024	Oryx Meeting Room, DoubleTree By Hilton Doha-Al Sadd, Doha, Qatar
2	May 13-17, 2024	Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
3	August 11-15, 2024	Al Aziziya Hall, The Proud Hotel Al Khobar, Al Khobar, KSA
4	September 01-05, 2024	Oryx Meeting Room, DoubleTree By Hilton Doha-Al Sadd, Doha, Qatar
5	November 03-07, 2024	Oryx Meeting Room, DoubleTree By Hilton Doha-Al Sadd, Doha, Qatar

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. This course covers all aspects of drilling fluids technology, emphasizing both theory and practical application. Drilling is a complex operation requiring the marriage of different technologies and disciplines. Today's drilling personnel must have a working knowledge of drilling fluid in order to effectively drill a well. This course provides the fundamentals necessary to drill a well, whether it is a shallow well or a complex, high pressure well.



During this interactive course, participants will learn the basic system classifications and function of additives; the various types of fluids including clear fluid systems, solids-enhanced fluids, contaminants, and handling and transporting fluids treatments and corrosive; the corrosion, including drilling-fluids corrosive agents and packer fluids; the drilling fluid contaminants and corrective treatments; the selection of water phase salinity and activity for bore hole stability as well as non-aqueous fluids to meet drilling requirements and environmental concerns; and the non-aqueous drilling fluid systems.

Course Objectives

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

- Apply a comprehensive knowledge on drilling fluids
- Determine the basic system classifications and function of additives
- Discuss the various types of fluids including clear fluid systems, solids-enhanced fluids, contaminants, and handling and transporting fluids treatments and corrosive
- Identify the corrosion, including drilling-fluids corrosive agents and packer fluids
- Identify drilling fluid contaminants and prescribe corrective treatments
- Select water phase salinity and activity for bore hole stability and select non-aqueous fluids to meet drilling requirements and environmental concerns
- Manage non-aqueous drilling fluid systems

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 overview of all significant aspects and considerations of drilling fluids technology for drilling engineers, drilling representatives, drilling fluid engineers and contractor personnel, drilling supervisors, mud engineers, cementing engineers (offshore and onshore personnel), tool pushers, managers and technical support involved with drilling operations and responsible for the development, planning and application of the drilling fluids program.

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:

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- 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.

Accommodation


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

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 **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. Sigve Hamilton, MSc, BSc, is a Senior Drilling & Petroleum Engineer with over 20 years of onshore & offshore experience within the Oil & Gas, Refinery and Petroleum industries. His specialization widely covers in the areas of Advanced Drilling Operation Management, Drilling Fluid Technology, Directional & Horizontal Drilling, Drilling Optimization & Well Planning, Drilling Operation Management, Drilling Control & Operation, Drilling & Completion Design, Drilling & Stuck Pipe Prevention, Gas Lift Operations, Gas Lift Design & Technology, Production Technology, Production Logging, Well Logging, Well Test Analysis, Well Testing Procedures & Evaluation, Well Performance & Control, Wellhead Operations, Wellhead Design, Tubing Design & Casing, Well Production Optimization, Well Control & Blowout Prevention, Coiled Tubing Technology, Coring & Core Analysis, Core & Log Integration, Core Logging, Carbonate & Seismic Sequence Stratigraphy, Completion & Casing Design, CO₂ & Injection System, Fracture Characterization & Modelling, PVT Analysis, Fluid Mechanics, Fluid Dynamics, Water Shutoff, Water Injection Technology, Water Flooding, Petroleum Engineering, Petroleum Geology, Petroleum Physics, Petroleum Data Management, Petroleum Exploration, Reservoir Engineering & Management, Reservoir Simulation, Reservoir Geophysics, Naturally Fractured Reservoir, Streamline Simulation, Carbonate Rocks & Siliciclastic Rocks, Applied Rock Mechanics, Rock Physics, Sedimentology & Sequence Stratigraphy, Special Core Analysis, Artificial Lift Design, Enhanced Oil Recovery, Subsurface Production Operation, Rig Inspection, Logging, Hydraulic & Pneumatic, Heterogeneity Modelling for Reservoir Characterization, Prosper, 3D Geological Modelling, Property & Heterogeneity Modelling, IRAP RMS Streamlines, Grid Design & Upscaling for Reservoir Simulation and MBAL, Prosper and GAP Software,

During his career life, Mr. Hamilton held significant positions and dedication as the **Petroleum Engineer, Drilling Engineer, Petroleum/QHSE Engineer, Reservoir Engineer, Field Manager, Laboratory Engineer, Mudlogging Geologist, Geoscientist, Petroleum/Production Engineer & Consultant, Project Engineer/Risk Advisor, Petroleum Consultant/Advisor, Inspector/Study Leader and Senior Instructor/Lecturer** from various companies and universities such as the University of Akureyri (UNAK), Stavanger Offshore Technical School, Akademiet, Peteka, FMC Technologies, Gerson Lehrman Group, Ocean Rig, Oilfield Technology Group, Talisman, IOR Chemco, Geoservices, ResLab and Roxar.

Mr. Hamilton has a **Master's degree in Petroleum Engineering** and a **Bachelor's degree in Reservoir Engineering** from **The University of Stavanger, Norway**. Further, he is a **Certified Instructor/Trainer** and delivered numerous trainings, workshops, courses, seminars and conferences internationally.

Course Fee

Doha	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.
Abu Dhabi	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.
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.

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	<i>Registration & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0930	Classification of Drilling Fluids & Additives <i>Basic System Classifications • Functions of Additives</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Completion Fluids <i>Overview • Clear-Fluid Systems • Solids-Enhanced Fluids • Contaminants • Handling & Transporting Fluids</i>
1100 – 1200	Basic Chemistry
1200 – 1230	Clay Chemistry
1230 – 1245	<i>Break</i>
1245 – 1315	Corrosion <i>Corrosion Overview • Drilling-Fluid Corrosive Agents • Packer-Fluid Treatments • Corrosivity of Completion/Wo Fluids • Corrosion Test Corrosion Troubleshooting • Product Information</i>
1315 – 1345	Displacement <i>Displacement Overview • Displacement Procedure • Spacer Recommendations & Formulations</i>
1345 – 1420	Drill-In Fluids <i>Overview Drill-In Fluid Systems • Available DIF Systems</i>
1420 – 1430	Recap <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow</i>
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0830	Field & Specialized Tests <i>Overview Field Testing • Field Tests Explained • Overview Specialized Tests • Specialized Tests Explained • Test Equipment, Procedures & Results</i>
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0830 – 0930	Foam & Aerated Fluids Overview • Air Drilling • Foam Drilling • Aerated Mud • Determining Hydrostatic Loss Caused by Gas-Cut Mud • Corrosion
0930 – 0945	Break
0945 – 1045	Lost Circulation Overview Lost Circulation • Formations in Which Circulation May Be Lost • Corrective Procedures & Formulations • Locating the Loss Zone
1045 – 1145	Oil-Based Muds Overview • Oil-Based-Mud (OBM) Systems • Mud Management • Logging in OBM Special Applications • Product Usage Information
1145 – 1230	Rheology & Hydraulics Overview • Rheological Terms • Flow Regimes • Fluid Types • Rheological Models • Hydraulics Calculation Terms • Fluid Hydraulics Equations
1230 – 1245	Break
1245 – 1420	Solids Control Overview • Sources & Sizes of Solids • Mechanical Solids-Removal Equipment
1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Two

Day 3

0730 – 0830	Screen Devices
0830 – 0930	Centrifugal Separation Devices Dilution • Efficiency of Solids-Control Equipment
0930 – 0945	Break
0945 – 1045	Stuck Pipe Overview • Differential Sticking • Determining Depth to Stuck Zone • Packing off • Undergauge Hole • Keyseating • Freeing Stuck Pipe
1045 – 1130	Synthetic Based Muds (SBM) Classification of SBM Systems • SBM Systems Overview • Commercial SBM Systems • Logging Through SBM
1130 – 1230	Tables-Charts-Calculations Overview • Formulas for Adjusting Drilling Fluid Properties • Formulas for Calculating Area & Volume • Dimensions • Chemical Properties • Physical Properties • Specific Materials • Metric & Standard Conversion Factors
1230 – 1245	Break
1245 – 1330	Troubleshooting Completion/Workover Fluids • Foam/Aerated Drilling Fluids • Oil-Based Muds • Synthetic-Based Muds • Water-Based Muds
1330 – 1420	Water-Based Drilling Fluids Water-Based Mud (WBM) Systems • High Performance Water-Based Muds (HPWM)



1420 – 1430	Recap Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow
1430	Lunch & End of Day Three

Day 4

0730 - 0830	Well Cementing
0830 – 0930	HS&E Considerations (Health, Safety & Environmental)
0930 – 0945	Break
0945 – 1045	Well Control Overview • Kicks • Shut-In Procedures • Kill methods • Kick Control Problems
1045 – 1230	Cuttings, Cleaning & Disposal
1230 – 1245	Break
1245 – 1345	Drill Cuttings Evaluation Overview Drill Cuttings Evaluation • Cuttings Description Format • Clastic Rocks • Carbonate Rocks • Chemical Rocks • Carbonaceous Rocks • Igneous Rocks • Metamorphic Rocks • Sample Contamination
1345 – 1400	Course Conclusion Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
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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