

COURSE OVERVIEW DE0766
Advance Drilling Optimization for HPHT Wells

Course Title

Advance Drilling Optimization for HPHT Wells

Course Reference

DE0766

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Date/Venue



Session(s)	Date	Venue
1	April 28- May 02, 2024	The Kooh Al Noor Meeting Room, The H Dubai Hotel, Sheikh Zayed Rd - Trade Centre, Dubai, UAE
2	September 01-05, 2024	Kizkulesi, Crown Plaza Istanbul Asia Hotels & Convention Center, Istanbul, Turkey
3	February 02-06, 2025	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 to provide participants with a detailed and up-to-date overview of HPHT drilling design and operational practices. It covers the HPHT drilling including its differences, essentials, project aims, objectives, challenges and associated standards and practices; the HPHT geological hazards, risk assessment on HPHT reservoirs geology in the HPHT environment and risk assessment; the aspect of HPHT reservoirs and well architecture specificities of HPHT wells; the casing design specific to HPHT; the OCTG choice, OCTG connector choice and surface equipment for HPHT wells; and the well equipment covering liner, wellheads and casing hangers.



Further, the course will also discuss the annulus management systems, subsea HPHT specificities and downhole equipment challenges; the casing wear, wellhead growth and fluids and cement aspects of HT environments; the kick tolerance modeling, hydraulic modeling in HPHT operations, logging, in-field drilling and rig inspection program; the equipment specific to HPHT, hydrates and HPHT checklists; and the HPHT procedures, HPHT coring, wireline logging, wellbore breathing, well control and ballooning.

During this highly interactive course, participants will learn the gas expansion, mud weight management, well control procedures and pressure drilling management; the fingerprinting connections, swab and surge, compressibility test, drain back/flow volume and contingency planning; and the well control emergencies and HPHT completions.

Course Objectives

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

- Apply and gain a comprehensive knowledge on HPHT drilling design and operational practices
- Carryout well planning and operational design for HTHP wells
- Discuss HPHT drilling including its differences, essentials, project aims, objectives, challenges and associated standards and practices
- Recognize HPHT geological hazards and carryout risk assessment on HPHT reservoirs geology in the HPHT environment including HPHT geological hazards and risk assessment
- Explain the aspect of HPHT reservoirs and well architecture specificities of HPHT wells
- Illustrate the casing design specific to HPHT as well as discuss OCTG choice, OCTG connector choice and surface equipment for HPHT wells
- Identify well equipment covering liner, wellheads and casing hangers
- Recognize annulus management systems, subsea HPHT specificities and downhole equipment challenges
- Discuss casing wear, wellhead growth and fluids and cement aspects of HT environments
- Illustrate kick tolerance modeling, hydraulic modeling in HPHT operations, logging, in-field drilling and rig inspection program
- Recognize equipment specific to HPHT, hydrates and HPHT checklists
- Employ HPHT procedures, HPHT coring, wireline logging, wellbore breathing, well control and ballooning
- Identify gas expansion and apply mud weight management, well control procedures and pressure drilling management
- Carryout fingerprinting connections, swab and surge, compressibility test, drain back/flow volume and contingency planning
- Apply well control emergencies and HPHT completions

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 HPHT drilling design and operational practices for drilling engineers, drilling supervisors and drilling superintendents.

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 Fee

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.
Istanbul	US\$ 8,500 per Delegate + VAT . This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
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.



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, MSc, BSc, is a Senior Petroleum Engineer & Well Completions Specialist with over 25 years of offshore and onshore experience in the Oil & Gas, Refinery & Petrochemical industries. His wide expertise includes Workovers & Completions, Petroleum Risk & Decision Analysis, Acidizing Application in Sandstone & Carbonate, Well Testing Analysis, Stimulation Operations, Reserves Evaluation, Reservoir Fluid Properties, Reservoir Engineering & Simulation Studies, Reservoir Monitoring, Artificial Lift Design, Gas Operations, Workover/Remedial Operations & Heavy Oil Technology, Applied Water Technology, Oil & Gas Production, X-mas Tree & Wellhead Operations & Testing, Artificial Lift Systems (Gas Lift, ESP, and Rod Pumping), Well Cementing, Production Optimization, Well Completion Design, Sand Control, PLT Correlation, Slickline Operations, Acid Stimulation, Well testing, Production Logging, Project Evaluation & Economic Analysis. 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 National Oil Company wherein he is involved in the mega-mature 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, 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 and Bachelor 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.

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

0730 - 0800	<i>Registration & Coffee</i>
0800 - 0815	<i>Welcome & Introduction</i>
0815 - 0830	PRE-TEST
0830 - 0900	<i>Introduction to HPHT Drilling</i>
0900 - 0930	<i>Defining the HPHT Environment</i>
0930 - 0945	<i>Break</i>
0945 - 1030	<i>HPHT Differences & Essentials</i>
1030 - 1115	<i>HPHT Projects Aims & Objectives</i>
1115 - 1200	<i>HPHT Challenges & Associated Standards & Practices</i>
1200 - 1230	<i>Geology in the HPHT Environment</i>
1230 - 1245	<i>Break</i>
1245 - 1330	<i>HPHT Geological Hazards & Risk Assessment</i>
1330 - 1420	<i>HPHT Reservoirs</i>
1420 - 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2

0730 - 0800	<i>Aspects of HPHT Reservoirs (Effect of Depletion, Geomechanics)</i>
1000 - 1100	<i>Well Architecture Specificities of HPHT Wells</i>
0930 - 0945	<i>Break</i>
0945 - 1030	<i>Casing Design Specific to HPHT (Thermal Simulations/Introduction to Limit-state & Reliability Based Design/Survival Loads)</i>
1030 - 1115	<i>OCTG Choice (Material Grade, SSC, Qualification)</i>
1115 - 1200	<i>OCTG Connector Choice (Test & Qualification)</i>
1200 - 1230	<i>Surface Equipment for HPHT Wells</i>
1230 - 1245	<i>Break</i>
1245 - 1330	<i>Well Equipment (Liner, Wellheads, Casing Hangers)</i>
1330 - 1420	<i>Annulus Management Systems (N₂ Cushion, Burst Discs, Crushable Foams)</i>
1420 - 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 - 0830	<i>Subsea HPHT Specificities (Wellhead Fatigue, X-Mas Tree Choice, APB)</i>
0830 - 0930	<i>Downhole Equipment Challenges</i>
0930 - 0945	<i>Break</i>
0945 - 1030	<i>Casing Wear (Modeling, Measurement, Remedial)</i>
1030 - 1115	<i>Wellhead Growth (Modeling & Impacts, Heat Island Effect)</i>
1115 - 1200	<i>Fluids & Cement Aspects of HT Environments</i>
1200 - 1230	<i>Kick Tolerance Modeling (Dispersed Modeling w/ Drill Bench or Equivalent, Limitations of Single Bubble in HPHT)</i>



1230 - 1245	Break
1245 - 1330	Hydraulic Modeling in HPHT Operations
1330 - 1420	Logging (Current HT Limitations on MWD Tooling)
1420 - 1430	Recap
1430	Lunch & End of Day Three

Day 4

0730 - 0830	In-field Drilling (Depletion & Stress Caging)
0830 - 0930	Rig Inspection Program for HPHT Operations
0930 - 0945	Break
0945 - 1030	Equipment Specific to HPHT (Mud Coolers, Kick Assembly, Early-Kick-Detection)
1030 - 1115	Hydrates (Formation Mechanisms, Prevention)
1115 - 1200	HPHT Checklists
1200 - 1230	HPHT Procedures (Pit Management & Discipline, Breaking Circulation, Connections, Flow Checks, Tripping Procedures, Pump Out of Hole)
1230 - 1245	Break
1245 - 1330	HPHT Coring & Wireline Logging
1330 - 1420	Wellbore Breathing (Breathing vs. Kick, Loss-gain Scenarios, Supercharging Mechanisms, Fracture)
1420 - 1430	Recap
1430	Lunch & End of Day Four

Day 5

0730 - 0800	Well Control & Ballooning
0800 - 0830	Gas Expansion
0830 - 0930	Mud Weight Management
0930 - 0945	Break
0945 - 1030	Well Control Procedures
1030 - 1115	Managed Pressure Drilling
1115 - 1200	Fingerprinting Connections, Swab & Surge, Compressibility Test, Drain Back/Flow Volume
1200 - 1230	Contingency Planning
1230 - 1245	Break
1245 - 1315	Well Control Emergencies
1315 - 1345	HPHT Completions
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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