COURSE OVERVIEW DE0184
Directional Drilling, Horizontal and Sidetracking

Course Title
Directional Drilling, Horizontal and Sidetracking

Course Date/Venue
August 10-14, 2025/Al Buraimi Meeting Room, Sheraton Oman Hotel, Muscat Oman

Course Reference
DE0184

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

Course Description

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

This course is designed to provide participants with a good working knowledge on directional drilling, horizontal and sidetracking. Design considerations and operational aspects of directional and horizontal drilling will be highlighted in the course. The course will increase the understanding of the operations carried out by directional drillers and how directional and horizontals wells are planned and optimized. The basic applications and techniques for multilateral wells are also covered in the course.

The course will provide participants with necessary skills to plan and execute the drilling of directional and horizontal wells. It emphasizes the planning of well paths with single and multiple targets and selection of appropriate bottomhole assembly and drillstring for a given well path trajectory. The course also provides several opportunities for hands-on computer sessions for analyzing directional planning and simulating directional drilling process.

Specific problems associated with directional/horizontal drilling such as torque, drag, hole cleaning, logging, and drill string component design are included. Participants will receive instruction on planning and evaluating horizontal wells based on the objectives of the horizontal well. The basic applications and techniques for multi-lateral wells are covered in the course. Additionally, they will become familiar with the tools and techniques used in directional drilling such as survey instruments, bottomhole assemblies, motors, steerable motors, and steerable rotary systems. Participants will be able to predict wellbore path based on historical data and determine the requirements to hit the target.

Course Objectives

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

- Apply and gain an in-depth knowledge on directional drilling, horizontal and sidetracking
- Interpret TVD, polar, rectangular coordinates, dogleg severity and the problems associated with it
- Interpret torque and drag and what factors affect those in the drilling process
- Understand main concepts associated to well path planning
- Recommend suitable measures to mitigate operational issues related to directional and horizontal drilling
- Understand main concepts associated to well construction of multilateral wells
- Discuss directional profiles and other applications of directional drilling
- Carryout directional drilling methodologies and techniques, directional and horizontal drilling, side tracking, inaccessible location and offshore development drilling
- Recognize dry hot rock development, low permeability and heterogeneous reservoirs and water and gas coning
- Employ horizontal drilling methods and applications, plan directional and horizontal wells including extended reach wells (ERD) and apply directional well planning and navigation
- Plan and design optimum well-path trajectory, as well as implement the methods of calculating well-path trajectory from survey points and its presentation in 3D coordinate system
- Identify the operating principles and applications of surveying equipment
- Apply planning torque and drag calculations as well as dogleg, torque and drag calculations
- Implement hole cleaning practices in deviated and horizontal wells as well as multi-lateral wells concepts and application
- Identify the deflecting and drilling tools and methods and the factors controlling bit deflection
- Recognize the equipment and methods to kick off the well and control deviation

- Apply drillstring configuration with respect to long radius, short radius, ultra short radius and stabilizer configuration
- Illustrate drillstring design for directional control, calculate side forces and lead angle (building or dropping tendency) of the bit and determination of the shape of the string for a given bottomhole configuration
- Determine performance analysis of single versus multiple stabilizer bottomhole assembly
- Design bottomhole assembly for build-up, slant and drop-off sections of the well trajectory

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 directional, horizontal and sidetracking drilling for drilling engineers, field engineers, petroleum engineers, supervisors, directional drillers and other technical staff from work-over and other company staff involved in directional, horizontal and sidetracking drilling.

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$ 8,000 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course 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.

Accommodation

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

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. Samer Shukri, BSc, IADC, IWCF, is a **Senior Drilling & Petroleum Engineer** with over **25 years** of **offshore** and **onshore** experience in the **Oil** & **Gas**, **Refinery** & **Petrochemical** industries. His wide expertise includes **IADC WELLSHARP Drilling Operations Supervisor** Combination Both Surface & Subsea Stack, **IWCF Drilling Well Control**, **WellCAP** Driller, **WellCAP** Supervisor, **Well Control & Blow Out Prevention**, **Workovers & Completions**, **Well Completion** Design & Operations, **Well Intervention**, **Well Life Cyle**, **Well Stimulation** & **Workover** Planning, **Workover** Practices, **Workover** Operations, **Well Integrity** System, **Well Control**, **Oil & Water Wells**, **Workover/Remedial** Operations & **Heavy Oil** Technology, Plug & Abandonment of **Oil & Gas Wells**, **Petroleum** Engineering, **Open Hole & Cased Hole Logs**, **Petroleum Risk & Decision** Analysis, **Well Testing** Analysis, **Stimulation** Operations, **Coiled Tubing** Operations, **Coiled Tubing Equipment**, **Rigless** Operations, **Reserves Evaluation**, **Reservoir Fluid** Properties, **Reservoir** Engineering & Simulation Studies, **Reservoir** Monitoring, **Geology & Reservoir** Engineering, **Artificial Lift Design**, **Gas** Operations, **Applied Water** Technology, **Oil & Gas Production**, **X-mas Tree** & **Wellhead** Operations & **Testing**, **Wellbore Design & Construction**, **Drilling Fluids & Solids Control**, **Drilling Fluids & Cementing** Operations, **Drilling Practices & Techniques**, **Stuck Piping & Fishing** Operations, **Rig Equipment** Maintenance & Inspection, **Rigging & Lifting** Operations, **Artificial Lift** Systems (**Gas Lift**, **ESP** and **Rod Pumping**), **Well Cementing**, **Oil Field Cementing**, **Production Optimization**, **PLT** Correlation, **Slickline** Operations, **Well Testing**, **Production Logging**, **Wireline Logging**, **Wireline** Technology, **Wireline Fishing** Operations, **Project Evaluation** & **Economic Analysis**. Further, he is also well-versed in Marine Environment Protection, Maritime Professional Training, Operational Audit, Improvement, Planning & Management, Climate Change & Emissions Trading Services, International Trade & Shipping, **Fitness for Service-API 579**, **Refining Process & Petroleum** Products, **OSHA** (General Industry & Construction), **IOSH** (Managing Safely, Working Safely), **HSE** Standards & Procedures in the Oilfield, HSE Principles, Incident Prevention & Incidents, Working at Height, **First Aid**, **H2S** Awareness, Defensive Driving, Risk Assessment, Authorized Gas Tester (**AGT**), Confined Space Entry (**CSE**), Root Cause Analysis (**RCA**), Negotiation & Persuasion Skills, **ISO-9001** Quality Management System (**QMS**), ISO-14001 Environmental Management System (**EMS**), **ISO-45001** Occupational Health and Safety Management System (**OHSMS**), **ISO-17020** Conformity Assessment, ISO/TS-29001 Quality Management System, **IOS-50001**-Energy Management System (**EnMS**) and Basic Offshore Safety Induction & Emergency. Currently, he is actively involved in **Project Management** with special emphasis in **commissioning of new wells**, **completion design**, **well integrity** management, **production technology** and field optimization, performing conceptual studies, economic analysis with risk assessment and field development planning.

During his career life, Mr. Samer has gained his field experience through his various significant positions and dedication as the **Senior Production Engineer**, **Well Services Department Head**, **Senior Well Services Supervisor**, **Senior Well Integrity Engineer**, **Senior HSE Engineer**, **Well Services Supervisor**, **Drilling/Workover Supervisor**, **International oil & Gas Trainer**, **Leadership & Management Instructor** and **Senior Instructor/Trainer** from the various international companies such as the ADCO, Al Furat Petroleum Company (AFPC), Syrian Petroleum Company (SPC), Petrotech, Global Horizon-UK, HDTC, Petroleum Engineers Association, STC, Basra University and Velesto Drilling Academy, just to name a few.

Mr. Samer has **Bachelor's** degree in **Petroleum Engineering**. Further, he is an a **Certified IADC WELLSHARP Instructor**, **Accredited IWCF Drilling & Well Intervention Instructor**, a **Certified Instructor/Trainer**, a **Certified Train-the-Trainer** and further delivered innumerable training courses, seminars, conferences 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: ***Sunday, 10th of August 2025***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Directional Profiles & Other Applications of Directional Drilling***
0930 – 0945	*Break*
0945 – 1030	***Directional Drilling Methodologies & Techniques***
1030 – 1100	***Application of Directional & Horizontal Drilling***
1100 – 1130	***Side Tracking***
1130 – 1200	***Inaccessible Locations***
1200 – 1215	*Break*
1215 – 1300	***Offshore Development Drilling***
1300 - 1420	***Dry Hot Rock Development***
1420 - 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Monday, 11th of August 2025***

0730 – 0830	***Low Permeability & Heterogeneous Reservoirs***
0830 – 0930	***Water & Gas Coning***
0930 – 0945	*Break*
0945 – 1030	***Horizontal Drilling Methods & Applications***
1030 – 1100	***Planning Directional & Horizontal Wells Including Extended Reach Wells (ERD)***
1100 – 1200	***Directional Well Planning & Navigation***
1200 – 1215	*Break*
1215 – 1330	***Planning & Design of the Optimum Well-Path Trajectory***
1330 -1420	***Methods of Calculating Well-Path Trajectory from Survey Points & its Presentation in 3D Coordinate System***
1420 - 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: ***Tuesday, 12th of August 2025***

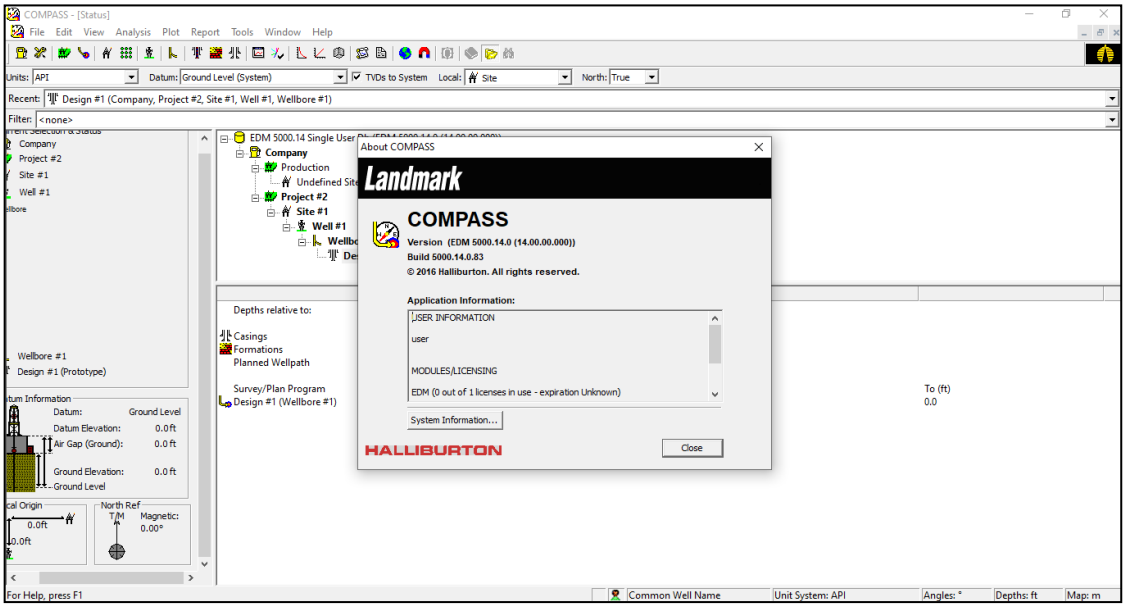
0730 – 0830	***Operating Principles & Applications of Surveying Equipment***
0830 – 0930	***TVD, Polar, Rectangular Coordinates, Dogleg Severity & The Problems Associated with it***
0930 – 0945	*Break*
0945 – 1030	***Planning Torque & Drag Calculations***
1030 – 1100	***Dogleg, Torque & Drag Calculations***
1100 – 1115	*Break*
1115 – 1300	***Torque & Drag & What Factors Affect Those in the Drilling Process***
1300 - 1420	***Main Concepts Associated with Well Path Planning***
1420 - 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4:	Wednesday, 13th of August 2025
0730 – 0830	***Hole Cleaning Practices in Deviated & Horizontal Wells***
0830 – 0930	***Multi-lateral Wells Concepts & Application***
0930 – 0945	*Break*
0945 – 1030	***Measures to Mitigate Operational Issues Related to Directional & Horizontal Drilling***
1030 – 1100	***Deflecting & Drilling Tools & Methods***
1100 – 1115	*Break*
1115 – 1300	***Factors Controlling Bit Deflection***
1300 - 1420	***Equipment & Methods to Kick Off the Well & Control Deviation***
1420 - 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5:	Thursday, 14th of August 2025
0730 – 0900	***Drillstring Configuration with Respect to Long Radius, Short Radius & Ultra Short Radius & Stabilizer Configuration***
0900 – 1030	***Drillstring Design for Directional Control***
1030 – 1045	*Break*
1045 – 1130	***Calculation of Side Forces & Lead Angle (Building or Dropping Tendency) of the Bit & Determination of the Shape of the String for a Given Bottomhole Configuration***
1130 – 1230	***Performance Analysis of Single Versus Multiple Stabilizer Bottomhole Assembly***
1230 – 1300	***Design of Bottomhole Assembly for Build-Up, Slant & Drop-Off Sections of the Well Trajectory***
1300 - 1315	*Break*
1315 – 1345	***Well Construction of Multilateral Wells***
1345 - 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulators (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art simulator "COMPASS" software.



COMPASS

Course Coordinator

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