



## COURSE OVERVIEW DE1050-4D Directional Drilling & Surveying

### Course Title

Directional Drilling & Surveying

### Course Date/Venue

December 16-19, 2024/ Boardroom 1, Elite  
Byblos Hotel Al Barsha, Sheikh Zayed Road,  
Dubai, UAE

### Course Reference

DE1050-4D

### Course Duration/Credits

Four days/2.4 CEUs/24 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 directional drilling and surveying. It covers the directional drilling fundamentals and terminology; the fundamentals, applications and limitations; the terminology, well objectives and target issues; the well planning positioning and coordinating systems; the proper surveying and advanced well planning; the survey calculation methods; the anti-collision and well planning; and the surveying tools, MWD, LWD, mudlogging and downhole equipment.



During this interactive course, participants will learn the drilling tools and deflection methods; the drilling motors overview; the BHA design and rotary steerable systems; the well planning and path design; the directional well path design; the horizontal well planning and calculations; the horizontal drilling planning and drill string design; the torque, drag, shocks and vibrations; the hole cleaning and wellbore stability; and the multilateral wells, geosteering and directional drilling problems and solutions.



## Course Objectives

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

- Apply and gain in-depth knowledge on directional drilling and surveying
- Discuss the directional drilling fundamentals and terminology comprising of fundamentals, applications and limitations as well as terminology, well objectives and target issues
- Carryout well planning positioning and coordinate systems as well as employ surveying and advanced well planning
- Apply survey calculation methods and discuss anti-collision and well planning
- Recognize the surveying tools, MWD, LWD, mudlogging and downhole equipment
- Identify the drilling tools, deflection methods and drilling motors
- Illustrate BHA design and rotary steerable systems including well planning and path design
- Employ directional well path design, horizontal well planning and calculations, horizontal drilling planning and drill string design
- Recognize torque, drag, shocks and vibrations as well as hole cleaning and wellbore stability
- Discuss the multilateral wells, geosteering, directional drilling problems and solutions

## 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 provides an overview of all significant aspects and considerations of directional drilling and surveying for drilling engineers, drilling supervisors, directional drillers, and service company personnel with basic drilling engineering skills.

## 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 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 **2.4 CEUs** (Continuing Education Units) or **24 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

**US\$ 6,750** per Delegate + **VAT**. This rate includes H-STK<sup>®</sup> (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:



**Ms. Diana Helmy**, PgDip, MSc, BSc, is a **Senior Petroleum & Geologist** with extensive years of experience within the **Oil & Gas, Refinery and Petrochemical** industries. Her expertise widely covers in the areas of His wide expertise covers **ESP Training, Crude Oil Artificial Lift Systems, Tubular & Pipe Handling, Tubular Strength, Casing & Tubing Design, Production/Injection Loads** for Casing Strings & Tubing, **Extend Reach Drilling, Drilling Loads, Drilling & Production Thermal Loads, Well Architecture, Wellhead Integrity,**

**Well Integrity & Artificial Lift, Well Integrity Management, Well Completion & Workover, Applied Drilling Practices, Horizontal Drilling, Petroleum Production, Reservoir Surveillance & Management, OFM Training, Integrated Field Management, Determining Factor of Fracturing Oil Wells, Advanced Oil & Gas Project Economics, Resource & Reserve Evaluation, Reserves Estimation & Uncertainty, Methods for Aggregation of Reserves & Resources, Horizontal & Multilateral Wells, Well Completion & Stimulation, Artificial Lift System Selection & Design, Well Testing & Oil Well Performance, Well Test Design Analysis, Well Test Operations, Well Testing & Perforation, Directional Drilling, Formation Damage Evaluation & Preventive, Formation Damage Remediation, Drilling & Formation Damage, Simulation Program for The International Petroleum Business, Well Testing & Analysis, Horizontal & Multilateral Wells & Reservoir Concerns, Oil & Gas Analytics, Petrophysics & Reservoir Engineering, Subsurface Geology & Logging Interpretation, Petroleum Geology, Geophysics, Seismic Processing & Exploration, Seismic Interpretation, Sedimentology, Stratigraphy & Biostratigraphy, Petroleum Economy, Core Analysis, Well Logging Interpretation, Core Lab Analysis & SCAL, Sedimentary Rocks, Rock Types, Core & Ditch Cuttings Analysis, Clastic, Carbonate & Basement Rocks, Stratigraphic Sequences, Petrographically Analysis, Thin Section Analysis, Scanning Electron Microscope (SEM), X-ray Diffraction (XRD), Cross-Section Tomography (CT), Conventional & Unconventional Analysis, Porosity & Permeability, Geological & Geophysical Model, Sedimentary Facies, Formation Damage Studies & Analysis, Rig Awareness, 2D&3D Seismic Data Processing, Static & Dynamic Correction, Noise Attenuation & Multiple Elimination Techniques, Velocity Analysis & Modeling and various software such as Petrel, OMEGA, LINUX, Kingdom and Vista. She is currently a **Senior Consultant** wherein she is responsible in different facets of **Petroleum & Process Engineering** from managing **asset integrity, well integrity process, pre-commissioning/commissioning** and **start up** onshore & offshore process facilities.**

During her career life, Ms. Diana worked as a **Reservoir Geologist, Seismic Engineer, Geology Instructor, Geoscience Instructor & Consultant** and **Petroleum Geology Researcher** from various international companies like the **Schlumberger, Corex Services** for Petroleum Services, Petrolia Energy Supplies and Alexandria University.

Ms. Diana has a **Postgraduate Diploma in Geophysics, Master's degree in Petroleum Geology and Geophysics** and a **Bachelor's degree in Geology**. Further, she is a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management (ILM)** and has delivered numerous trainings, courses, workshops, seminars and conferences internationally.



**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: Monday 16<sup>th</sup> of December 2024**

0730 - 0800	Registration & Coffee
0800 - 0815	Welcome & Introduction
0815 - 0830	<b>PRE-TEST</b>
0830 - 0930	<b>Directional Drilling Fundamentals &amp; Terminology</b>
0930 - 0945	Break
0945 - 1030	<b>Fundamentals, Applications &amp; Limitations</b>
1030 - 1130	<b>Terminology, Well Objectives &amp; Target Issues</b>
1130 - 1230	<b>Well Planning: Positioning &amp; Coordinate Systems</b>
1230 - 1245	Break
1245 - 1315	<b>Surveying &amp; Advanced Well Planning</b>
1315 - 1420	<b>Survey Calculation Methods</b>
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day One

**Day 2: Tuesday 17<sup>th</sup> of December 2024**

0730 - 0830	<b>Anti-Collision &amp; Well Planning</b>
0830 - 0930	<b>Surveying Tools</b>
0930 - 0945	Break
0945 - 1030	<b>MWD, LWD &amp; Mudlogging</b>
1030 - 1130	<b>Downhole Equipment</b>
1130 - 1230	<b>Drilling Tools &amp; Deflection Methods</b>
1230 - 1245	Break
1245 - 1315	<b>Drilling Motors Overview</b>
1315 - 1420	<b>BHA Design</b>
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day Two

**Day 3: Wednesday 18<sup>th</sup> of December 2024**

0730 - 0830	<b>Rotary Steerable Systems</b>
0830 - 0930	<b>Well Planning &amp; Path Design</b>
0930 - 0945	Break
0945 - 1030	<b>Directional Well Path Design</b>
1030 - 1130	<b>Horizontal Well Planning &amp; Calculations</b>
1130 - 1230	<b>Horizontal Drilling Planning</b>
1230 - 1245	Break
1245 - 1315	<b>Drill String Design</b>
1315 - 1420	<b>Torque, Drag, Shocks &amp; Vibrations</b>
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day Three



**Day 4: Thursday 19<sup>th</sup> of December 2024**

0730 - 0930	<b>Hole Cleaning &amp; Wellbore Stability</b>
0930 - 0945	Break
0945 - 1030	<b>Hole Cleaning</b>
1030 - 1145	<b>Well Bore Stability</b>
1145 - 1230	<b>Introduction to Multilateral Wells</b>
1230 - 1245	Break
1245 - 1315	<b>Geosteering</b>
1315 - 1345	<b>Directional Drilling Problems &amp; Solutions</b>
1345 - 1400	<b>Course Conclusion</b>
1400 - 1415	<b>POST-TEST</b>
1415 - 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch &amp; End of Course</i>

**Practical Sessions**

This practical and highly-interactive course includes real-life case studies and exercises:-



**Course Coordinator**

Mari Nakintu, Tel: +971 2 30 91 714, Email: [mari1@haward.org](mailto:mari1@haward.org)

