COURSE OVERVIEW DE1028
Well Design

Course Title
Well Design

Course Date/Venue
Session 1: May 18-22, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar
Session 2: October 12-16, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar

Course Reference
DE1028

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 to provide participants with a detailed and up-to-date overview of well design, construction and engineering. It covers the drilling operations, exploration and production licenses, drilling personnel and rotary drilling equipment; the drilling process onshore and offshore, drilling economics, rig components, drillstring and drilling bits; the design of PDC and roller cone bits, selection of bits, grading of dull bits, assessing and improving the performance of drill bits; and the formation pressures and well control.

Further, the course will also discuss the origin and representation of pore pressures and fracture pressures, formation fracture pressures, well control, warning signs of kicks, well killing procedures, BOP equipment and BOP stack arrangements; the drilling fluids, hydraulics and casing; the functions, properties, design and selection of various types of drilling fluid; and the wellsite tests performed on drilling fluids, design of a solids control system and pressure losses in the drilling system.

During this interactive course, participants will learn the optimization of bit hydraulics; the major functions and properties of casing and casing string configurations; the casing running operations, casing design process and cementing and directional drilling; the functions and properties of cement and single and multiple stage cementing operations; assessing the quality of the cement sheath functions; the directional drilling, designing the trajectory for a directional well and directional drilling tools and BHAs; the wellbore surveying and calculating the trajectory of a directional well based on survey data; the measurement while drilling and subsea drilling, MWD and the value of real time data, MWD data collection and transmission techniques; and the tools equipment used to drill from a floating drilling rig.

Course Objectives

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

- Apply and gain in-depth knowledge on well design, construction and engineering
- Discuss drilling operations, exploration and production licenses, drilling personnel and rotary drilling equipment
- Explain the drilling process onshore and offshore, drilling economics, rig components, drillstring and drilling bits
- Discuss the design of PDC and roller cone bits, selection of bits, grading of dull bits and performance of drill bits
- Illustrate formation pressures and well control and explain the origin and representation of pore pressures and fracture pressures
- Discuss abnormal pressures, formation fracture pressures, well control, warning signs of kicks, well killing procedures, BOP equipment and BOP stack arrangements
- Explain drilling fluids, hydraulics and casing including the functions, properties, design and selection of various types of drilling fluid
- Evaluate wellsite tests performed on drilling fluids, design of a solids control system and pressure losses in the drilling system
- Optimize bit hydraulics and identify the major functions and properties of casing and casing string configurations
- Illustrate casing running operations, casing design process and cementing and directional drilling
- Recognize the functions and properties of cement including single and multiple stage cementing operations
- Assess the quality of the cement sheath, discuss directional drilling and design the trajectory for a directional well
- Identify directional drilling tools and BHAs, apply wellbore surveying and calculating trajectory of a directional well based on survey data
- Discuss measurement while drilling and subsea drilling, MWD and the value of real time data
- Employ MWD data collection and transmission techniques and recognize the tools and equipment used to drill from a floating drilling rig

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 well design, construction and engineering for drilling engineers, trainee drilling engineers, petroleum engineers and specialist service company engineers.

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

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.

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: -

- 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.

- 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. Stan Constantino, MSc, BSc, is a **Senior Petroleum & Reservoir Engineer** with over **35 years** of **Offshore & Onshore** extensive experience within the **Oil**, **Gas & Petroleum** industries**.** His area of expertise include **Reserves & Resources**, **Reserves Estimation & Uncertainty**, **Reservoir** Characterization, **Unconventional Resource & Reserves** Evaluation, **Oil & Gas Reserves** Estimation, Methods for **Aggregation of Reserves & Resources**, **Fractured Reservoir** Classification & Evaluation, **Sequence Stratigraphy**, **Petrophysics & Rock** Properties, **Seismic** Technology, **Geological** Modelling, **Water Saturation**, **Crude Oil & Natural Gas** Demand, **Exploration Agreements & Financial** Modelling, **Seismic Survey** Evaluation, **Exploration Well** Identification, **Field Production** Operation, **Field Development** Evaluation, Crude Oil Marketing, **Core & Log Data** Integration, **Core Logging**, Advanced **Core & Log Integration**, **Well Logs & Core Analysis**, Advanced Petrophysics/Interpretation of **Cased Hole Logs**, **Cased Hole Formation Evaluation**, **Cased Hole Formation** Evaluation, **Cased Hole Evaluation**, **Cased-Hole Logging**, Applied **Production Logging & Cased Hole & Production Log** Evaluation, **Cased Hole Logging & Formation** Evaluation, Open & Cased Hole Logging, Screening of Oil Reservoirs for **Enhanced Oil Recovery**, **Enhanced Oil Recovery**, **Enhanced Oil Recovery** Techniques, **Petroleum Economic** Analysis, **Oil Industry** Orientation, **Oil Production & Refining**, **Crude Oil Market**, **Global Oil Supply & Demand**, **Global Oil Reserves**, **Crude Oil** Types & Specifications, **Oil Processing**, **Oil Transportation-Methods**, **Oil & Gas** Exploration and Methods, **Oil & Gas** Extraction, Technology Usage in Industrial Security; **Upstream**, **Midstream** & **Downstream Operations**; **Oil Reservoir** Evaluation & Estimation, **Oil Supply & Demand**, **Oil Contracts**, **Government Legislation & Oil Contractual Agreements**, **Oil Projects** & Their Feasibility (revenue and profitability), **Water Flooding**, **Reservoir** Souring & Water Breakthrough, **Reservoir Performance** Using Classical Methods, **Fractured Reservoir** Evaluation & Management, **Reservoir Surveillance** & Management, **Reservoir Engineering** & Simulation, **Reservoir Monitoring**, **Pressure Transient** Testing & **Reservoir** Performance Evaluation, **Reservoir** Characterization, **Reservoir** Engineering Applications with ESP and Heavy Oil, **Reservoir** Volumetrics, Water Drive Reservoir, **Reserve** Evaluation, Rock & Fluid Properties, Fluid Flow Mechanics, PVT Analysis, Material Balance, Darcy's Law & Applications, Radial Flow, **Gas Well** Testing, Natural Water Influx, EOR Methods, Directional Drilling, **Drilling** Production & Operations, Field Development & Production of Oil & Gas, **Wireline Logging**, **Mud Logging**, **Cased Hole Logging**, **Production Logging**, **Slick Line**, **Coil Tubing**, Exploration Wells Evaluation, **Horizontal Wells**, **Well Surveillance**, **Well Testing**, **Design & Analysis**, **Well Testing & Oil Well Performance**, **Well Log Interpretation** (**WLI**), **Formation Evaluation**, **Well Workover Supervision**, **Pressure Transient Analysis** and **Petrophysical Log Analysis**. Currently, he is the **CEO** & **Managing Director** of **Geo Resources Technology** wherein he is responsible in managing the services and providing technical supports to underground energy related projects concerning **field development**, **production**, **drilling**, **reservoir engineering** and **simulation**.

Throughout his long career life, Mr. Stan has worked for many international companies such as the **Kavala Oil**, **North Aegean Petroleum Company** and **Texaco Inc.**, as the **Managing Director**, **Operations Manager**, **Technical Trainer**, **Training Consultant**, **Petroleum Engineering & Exploration Department Head**, **Assistant Chief Petroleum Engineer**, **Reservoir Engineer, Resident Petroleum Engineer**, **Senior Petroleum Engineer** and **Petroleum Engineer** wherein he has been managing the evaluation of exploration wells, reservoir simulation, development training, production monitoring, wireline logging and well testing including selection and field application of well completion methods.

Mr. Stan has a **Master's** degree in **Petroleum Engineering** and a **Bachelor's** degree in **Geology** from the **New Mexico Institute of Mining & Technology** (**USA**) and from the **Aristotelian University** (**Greece**) respectively. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership of Management (ILM**) and a member of the Society of Petroleum Engineers, USA (**SPE**), Society of Well Log Professional Analysts, USA (**SPWLA**) and European Association of Petroleum Geoscientists & Engineers (**EAGE**). Moreover, Mr. Stan published numerous scientific and technical papers and delivered various trainings, courses 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

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0900	***Overview of Drilling Operations***
0900 – 0930	***Exploration & Production Licenses, Drilling Personnel & Rotary Drilling Equipment***
0930 - 0945	*Break*
0945 – 1045	***The Drilling Process Onshore & Offshore***
1045 – 1130	***Drilling Economics***
1130 – 1200	***Rig Components***
1200 – 1230	***The Drillstring***
1230 – 1245	*Break*
1245 – 1330	***Design of the Drillstring***
1330 - 1420	***Drilling Bits***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Design of PDC & Roller Cone Bits, Selection of Bits, Grading of Dull Bits, Assessing & Improving the Performance of Drill Bits***
0830 – 0930	***Formation Pressures & Well Control***
0930 – 0945	*Break*
0945 – 1045	***Introduction to Origin & Representation of Pore Pressures & Fracture Pressures***
1045 – 1115	***Origin, Prediction & Detection of Abnormal Pressures***
1115 – 1230	***Drilling Problems Associated with Abnormal Pressures***
1230 – 1245	***Prediction & Confirmation of Formation Fracture Pressures***
1245 – 1300	*Break*
1300 – 1400	***Principles of Primary & Secondary Well Control***
1400 - 1420	***Warning Signs of Kicks***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***Well Killing Procedures***
0830 – 0930	***BOP Equipment & BOP Stack Arrangements***
0930 – 0945	*Break*
0945 – 1045	***Drilling Fluids, Hydraulics & Casing***
1045 – 1115	***Functions, Properties, Design/Selection of Various Types of Drilling Fluid***
1115 – 1230	***Wellsite Tests Performed on Drilling Fluids***
1230 – 1245	***Design of a Solids Control System***
1245 – 1315	***Introduction of Pressure Losses in the Drilling System***
1315 – 1330	*Break*

1330 – 1400	***Optimization of Bit Hydraulics***
1400 - 1420	***Major Functions & Properties of Casing & Casing String Configurations***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

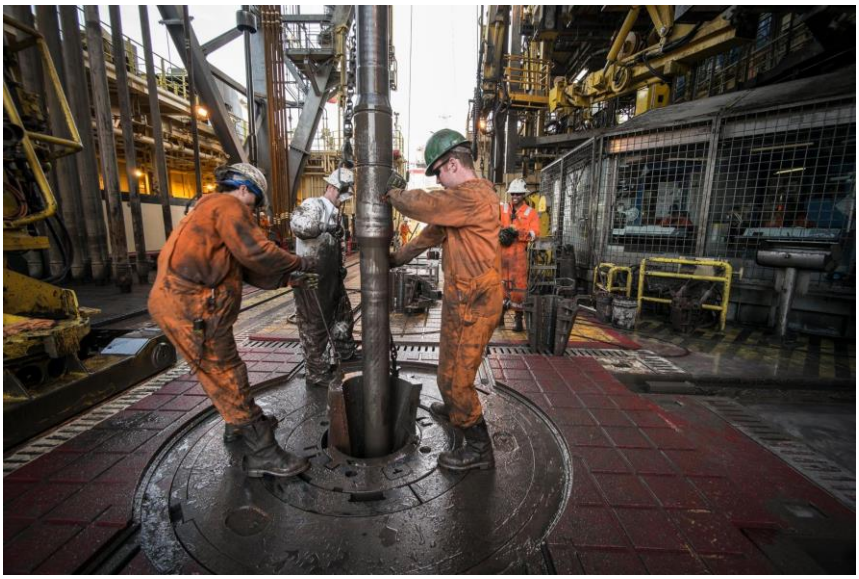
0730 – 0830	***Casing Running Operations***
0830 – 0930	***The Casing Design Process***
0930 – 0945	*Break*
0945 – 1045	***Cementing & Directional Drilling***
1045 – 1115	***Functions & Properties of Cement, Single & Multiple Stage Cementing Operations***
1115 – 1230	***Designing a Cementing Operation***
1230 – 1245	***Assessing the Quality of the Cement Sheath***
1245 – 1320	***Introduction to Directional Drilling***
1320 – 1335	*Break*
1335 - 1400	***Designing the Trajectory for a Directional Well***
1400 - 1420	***Directional Drilling Tools & BHAs***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0830	***Introduction to Wellbore Surveying***
0830 – 0930	***Calculating the Trajectory of a Directional Well Based on Survey Data***
0930 – 0945	*Break*
0945 – 1045	***Directional Surveying Tools***
1045 – 1115	***Measurement While Drilling & Subsea Drilling***
1115 – 1230	***Introduction to MWD & the Value of Real Time Data***
1230 – 1245	***MWD Data Collection & Transmission Techniques***
1245 – 1300	*Break*
1300 – 1345	***Introduction to Tools & Equipment Used to Drill from a Floating Drilling Rig***
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

Reem Dergham, Tel: +974 4423 1327, Email: reem@haward.org