COURSE OVERVIEW DE0448
Drilling Problems and Drilling Optimization

Course Title
Drilling Problems and Drilling Optimization

Course Date/Venue
Please see page 3

Course Reference
DE0448

3.0 CEUs (30 PDHs) AWARD

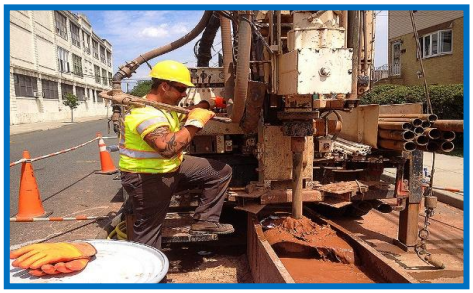
Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

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 Drilling Problems and Drilling Optimization. It covers the drilling industry, key terminologies and the basic process of drilling wells; the drilling rig, pipe sticking, lost circulation and blowouts; the types of drilling muds, properties and their role in addressing drilling challenges; the importance of effective hole cleaning, hydraulics optimization and impact on drilling operations; the drill string components, stresses and failure modes; and the causes of high torque and drag and methods to mitigate them.

Further, the course will also discuss the geological causes of borehole instability and techniques for maintaining borehole integrity; identifying, preventing and remediating differential sticking; the surveying and bottom hole assembly (BHA) design; the fundamentals, tools and techniques for directional and horizontal drilling; the extended reach drilling (ERD), underbalanced and pressure drilling; and the drilling optimization software, technology, real-time data analysis and decision making.



During this interactive course, participants will learn the fundamentals of well control and the importance of maintaining wellbore pressure; the well control equipment and well control procedures, risk assessment and management and health, safety, and environmental (HSE) considerations; the cost management in drilling operations and the latest developments in high-performance fluids to address complex drilling challenges; the impact of robotics and automation on drilling efficiency and safety; and the sustainable practices in drilling operations.

Course Objectives

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

- Apply a comprehensive knowledge on drilling problems and drilling optimization
- Discuss the drilling industry, key terminologies, and the basic process of drilling wells including the parts of a drilling rig and their functions
- Explain the typical issues such as pipe sticking, lost circulation, and blowouts as well as the types of drilling muds, properties, and their role in addressing drilling challenges
- Discuss the importance of effective hole cleaning, hydraulics optimization, and impact on drilling operations
- Analyze drill string components, stresses and failure modes and discuss the causes of high torque and drag and methods to mitigate them
- Identify the geological causes of borehole instability and techniques for maintaining borehole integrity
- Identify, prevent and remediate differential sticking and apply surveying and bottom hole assembly (BHA) design
- Discuss the fundamentals, tools, and techniques for directional and horizontal drilling and extended reach drilling (ERD)
- Determine underbalanced and managed pressure drilling, drilling optimization software and technology and real-time data analysis and decision making
- Recognize the fundamentals of well control and the importance of maintaining wellbore pressure
- Identify the well control equipment and apply well control procedures, risk assessment and management and health, safety, and environmental (HSE) considerations
- Carryout cost management in drilling operations and discuss the latest developments in high-performance fluids to address complex drilling challenges
- Discuss the impact of robotics and automation on drilling efficiency and safety and the sustainable practices in drilling operations

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 problems and drilling optimization for drilling engineers, drilling representatives, drilling fluid engineers and contractor personnel, drilling supervisors, mud engineers, cementing engineers and technical support.

Course Date/Venue

Session(s)	Date	Venue
1	April 05-09, 2026	Meeting Room 4, Four Seasons Hotel Cairo at Nile Plaza, Corniche El Nil, Garden City, Cairo, Egypt
2	April 12-16, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
3	May 31-June 04, 2026	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
4	July 05-09, 2026	Pierre Lotti Meeting Room, Movenpick Hotel Istanbul Golden Horn, Istanbul, Turkey
5	August 31-September 04, 2026	Ruben Boardroom, The Rubens at The Palace, Buckingham Palace Road, London, United Kingdom
6	October 04-08, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
7	November 30-December 04, 2026	Salon Expo, NH Hotel Plaza de Armas, Seville, Spain
8	January 24-28, 2027	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
9	March 14-18, 2027	Meeting Room 4, Four Seasons Hotel Cairo at Nile Plaza, Corniche El Nil, Garden City, Cairo, Egypt

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
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 H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
London	**US$ 8,800** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Seville	**US$ 8,800** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Cairo	**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

Haward's 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**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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. 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.

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 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 – 0930	***Overview of Drilling Operations:*** *Introduction to the Drilling Industry, Key Terminologies & the Basic Process of Drilling Wells*
0930 – 0945	*Break*
0945 – 1030	***Drilling Rig Components:*** *Detailed Discussion on the Parts of a Drilling Rig and their Functions*
1030 – 1130	***Common Drilling Problems:*** *Overview of Typical Issues such as Pipe Sticking, Lost Circulation and Blowouts*
1130 - 1230	***Drilling Fluids:*** *Types of Drilling Muds, Properties & their Role in Addressing Drilling Challenges*
1230 – 1245	*Break*
1245 – 1345	***Hole Cleaning & Hydraulics:*** *Importance of Effective Hole Cleaning, Hydraulics Optimization & Impact on Drilling Operations*
1345 – 1420	***Case Studies:*** *Real-World Examples of Drilling Problems & the Strategies Used to Overcome Them*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Drill String Design & Optimization:*** *Analysis of Drill String Components, Stresses, & Failure Modes*
0830 – 0930	***Torque & Drag Analysis:*** *Understanding the Causes of High Torque & Drag & Methods to Mitigate Them*
0930 – 0945	*Break*
0945 – 1100	***Borehole Instability:*** *Geological Causes of Borehole Instability & Techniques for Maintaining Borehole Integrity*
1100 - 1230	***Differential Sticking:*** *Identification, Prevention, & Remediation of Differential Sticking*
1230 – 1245	*Break*

1245 – 1345	***Surveying & Bottom Hole Assembly (BHA) Design:*** *Principles of Wellbore Positioning & BHA Configurations for Optimal Performance*
1345 - 1420	***Interactive Session:*** *Problem-Solving Session with Hypothetical Scenarios on Drill String & Borehole Issues*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***Directional Drilling:*** *Fundamentals, Tools & Techniques for Directional & Horizontal Drilling*
0830 – 0930	***Extended Reach Drilling (ERD):*** *Challenges & Solutions in ERD to Maximize Reservoir Exposure*
0930 – 0945	*Break*
0945 – 1100	***Underbalanced & Managed Pressure Drilling:*** *Principles, Applications & Benefits of these Drilling Techniques*
1100 - 1230	***Drilling Optimization Software & Technology:*** *Latest Advancements in Software & Technology Used for Drilling Optimization*
1230 – 1245	*Break*
1245 – 1330	***Real-Time Data Analysis & Decision Making:*** *Utilizing Real-Time Data for Immediate Decision-Making to Enhance Drilling Operations*
1330 – 1420	***Workshop:*** *Hands-On Exercise Using Drilling Simulators to Apply Knowledge of Advanced Drilling Techniques*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	***Well Control:*** *The Fundamentals of Well Control & the Importance of Maintaining Wellbore Pressure*
0830 – 0930	***Well Control Equipment:*** *Detailed Look at Blowout Preventers (Bops) & Other Critical Equipment*
0930 – 0945	*Break*
0945 – 1100	***Well Control Procedures:*** *Standard Procedures for Detecting & Responding to Well Control Situations*
1100 - 1230	***Risk Assessment & Management:*** *Techniques for Identifying & Managing Risks in Drilling Operations*
1230 – 1245	*Break*
1245 – 1330	***Health, Safety, & Environmental (HSE) Considerations:*** *Best Practices & Regulatory Compliance for Safety in Drilling Operations*
1330 – 1420	***Simulation Drill:*** *Practical Well Control Simulation to Practice Response Strategies in a Controlled Environment*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5:

0730 - 0830	***Case Study Analysis:*** *Review of Several Detailed Case Studies Focusing on Different Aspects of Drilling Problems & Optimizations*
0830 – 0930	***Cost Management in Drilling Operations:*** *Strategies for Reducing Costs While Maintaining Safety & Efficiency*
0930 – 0945	*Break*

0945 – 1045	***High-Performance Drilling Fluids:*** *Latest Developments in High-Performance Fluids to Address Complex Drilling Challenges*
1045 – 1230	***Automation in Drilling:*** *Impact of Robotics & Automation on Drilling Efficiency & Safety*
1230 – 1245	*Break*
1245 – 1345	***Sustainability in Drilling Operations:*** *Discussion on Sustainable Practices & their Integration into Existing Operations*
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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