COURSE OVERVIEW DE0996-4D

Well Testing & Production Optimization Operations

Course Title

Well Testing & Production Optimization Operations

Course Date/Venue

Session 1: August 12-15, 2024/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Session 2: November 11-14, 2024/Al Aziziya Hall, The Proud Hotel Al Khobar, Al Khobar, KSA

Course Reference

DE0996-4D

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 well testing and production optimization operations. It covers the production optimization and production system; the inflow-outflow and IPR curve of well performance; the inflow and outflow performance relationships; the formation and fluid characterization; the PVT and sampling, liquid loading in gas wells and selection of design parameters based on field measurements; the need for and selection for artificial lift methods; the real time oil or gas field optimization network optimization; and the need of well testing.

Further, this course will also discuss the principles of well testing and well testing processes; the testing exploration wells and appraisal wells; the drill stem testing, objectives, tools, principles of operations, types of DST's and job design principles; and the testing of producing wells, opportunistic testing and well test program design.

During this interactive course, participants will learn the key parameters for successful well testing and real time techonology in well testing; the early production testing and well test interpretation; the theories behind well test interpretation; the common tools required for test interpretation; the best practice in well test interpretation; the observation of various plots; the pressure transient analysis, testing surface and down hole data acquisition; the open hole and cased hole sampling, methods of sampling, sample transfer, types of samplers and carriers; the surface well testing operation, safety concerns, operations and job design; and the new development of well testing and production optimization.

Course Objectives

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

- Apply and gain an in-depth knowledge on well testing and production optimization operations
- Discuss production optimization, production system and the inflow-outflow and IPR curve of well performance
- Explain inflow and outflow performance relationships as well as formation and fluid characterization
- Illustrate PVT and sampling, liquid loading in gas wells and selection of design parameters based on field measurements
- Identify the need for and selection for artificial lift methods
- Discuss real time oil or gas field optimization, network optimization basics and the need of well testing
- Explain the principles of well testing and well testing processes as well as testing exploration wells and appraisal wells
- Determine drill stem testing, objectives, tools, principles of operations, types of DST's and job design principles
- Employ testing producing wells, opportunistic testing and well test program design
- Identify the key parameters for successful well testing and real time techonology in well testing
- Implement early production testing and well test interpretation as well as discuss theories behind well test interpretation
- Identify the common tools required for test interpretation and illustrate the best practice in well test interpretation
- Observe from various plots and apply pressure transient analysis, testing surface and down hole data acquisition
- Employ open hole and cased hole sampling, methods of sampling, sample transfer, types of samplers and carriers
- Apply surface well testing operations, safety concerns, operations and job design
- Implement new development in well testing and production optimization

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 well testing and production optimization operations for drilling operations section leaders, field supervisors, drilling engineering supervisors, production engineers, reservoir engineers, well engineers, petroleum engineers, oil field consultant, well servicing/workover/ completion staff and field production staff.

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.

Accommodation

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

Course Fee

US$ 6,750 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:-

- 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.

- 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:

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 **Well** Architecture, **Wellhead Integrity**, **Well Integrity & Artificial Lift**, **Well Integrity** Management, **Well** Completion & Workover, Applied **Drilling** Practices, Horizontal **Drilling**, **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, **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.

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	***Production Optimization***
0900 – 0930	***Production System Analysis***
0930 – 0945	*Break*
0945 – 1030	***Well Performance: Inflow – Outflow, IPR Curve***
1030 – 1115	***Inflow Performance Relationship***
1115 – 1145	***Outflow Performance Relationship***
1145 - 1230	***Formation & Fluid Characterization***
1230 - 1315	*Break*
1315 - 1345	***PVT & Sampling***
1345 – 1420	***Reservoirs Description & Driving Mechanisms***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Liquid Loading in Gas Wells***
0830 – 0930	***Selection of Design Parameters Based on Field Measurements***
0930 – 0945	*Break*
0945 – 1030	***Need for & Selection for Artificial Lift Methods***
1030 – 1100	***Real Time Oil or Gas Field Optimisation***
1100 – 1145	***Network Optimization Basics***
1145 – 1230	***The Need for Well Testing***
1230 - 1245	*Break*
1245 - 1315	***Principles of Well Testing, Basic Overview of Well Testing Processes***
1315 - 1345	***Testing Exploration Wells - Appraisal Wells***
1345 - 1420	***Drill Stem Testing & Case Study, Objectives, Tools, Principle of Operations, Types of DST's, Job Design Principles***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***Testing Producing Wells, Opportunistic Testing***
0830 – 0930	***Well Test Program Design***
0930 – 0945	*Break*
0945 – 1030	***Key Parameters for Successful Well Testing***
1030 – 1115	***Real-Time Technology in Well Testing***
1115 – 1145	***Early Production Testing***
1145 - 1230	***Introduction to Well Test Interpretation, Theories Behind Well Test Interpretation***
1230 - 1245	*Break*

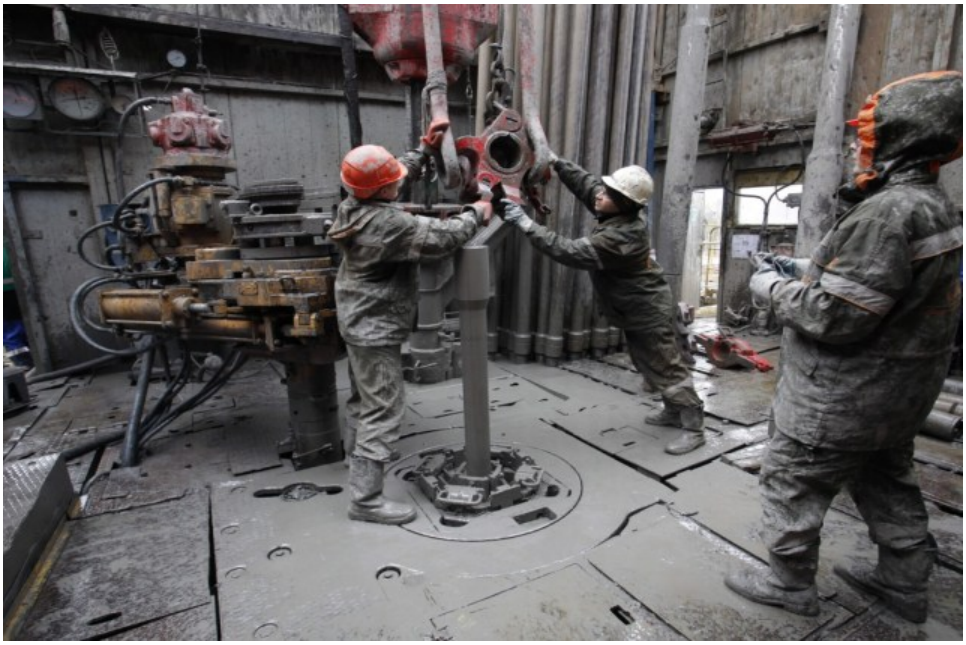
1245 – 1315	***Common Tools Required for Test Interpretation***
1315 – 1345	***Best Practice in Well Test Interpretation***
1345 - 1420	***Observations from Various Plots, Pressure Transient Analysis***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	***Testing Surface & Down Hole Data Acquistion***
0830 – 0930	***Open Hole & Cased Hole Sampling, Methods of Sampling, Sample Transfer, Types of Samplers & Carriers***
0930 – 0945	*Break*
0945 – 1230	***Surface Well Testing Operations: Safety Concerns, Operations & Job Design***
1230 - 1245	*Break*
1245 - 1345	***New Development in Well Testing & Production Optimization***
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

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org