COURSE OVERVIEW DE0377
Advanced Well Testing & Interpretation

Course Title
Advanced Well Testing & Interpretation

Course Date/Venue
Session 1: February 09-13, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar
Session 2: August 10-14, 2025/Meeting Plus 8, City Centre Rotana Doha Hotel, Doha, Qatar

Course Reference
DE0377

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 Advanced Well Testing and Interpretation. It covers the importance of well testing in reservoir management; the different fluid types and flow patterns in reservoirs; the pressure transient analysis and how wellbore conditions affect test data; the safety considerations in well testing; the detailed pressure transient analysis and interpretation; the pressure derivative analysis, type curve analysis and rate transient analysis; the effective well test design and planning, interference testing, pulse testing and multi-rate testing; and the wellbore storage, skin effect and gas well testing.

During this interactive course, participants will learn the naturally fractured reservoirs, horizontal well testing and reservoir boundaries and heterogeneities; analyzing pressure transient behavior in different reservoir types; integrating well test data with reservoir simulation; using well test data for reservoir management decisions and real-time well test data interpretation; the pressure transient analysis in unconventional reservoirs; the impact of oil recovery (EOR) on well test interpretation; and the best practices for data handling and reporting.

Course Objectives

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

- Apply and gain an advanced knowledge on well testing and interpretation
- Discuss the importance of well testing in reservoir management and identify the different fluid types and flow patterns in reservoirs
- Carryout pressure transient analysis and identify how wellbore conditions affect test data
- Employ safety considerations in well testing as well as detailed pressure transient analysis and interpretation
- Carryout pressure derivative analysis, type curve analysis and rate transient analysis
- Apply effective well test design and planning, interference testing, pulse testing and multi-rate testing
- Identify and analyze wellbore storage and skin effect and apply gas well testing
- Test and interpret naturally fractured reservoirs, horizontal well testing and reservoir boundaries and heterogeneities
- Analyze pressure transient behavior in different reservoir types and integrate well test data with reservoir simulation
- Use well test data for reservoir management decisions and apply real-time well test data interpretation
- Carryout pressure transient analysis in unconventional reservoirs and discuss the impact of oil recovery (EOR) on well test interpretation
- Implement best practices for data handling and reporting

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 consideration of advanced well testing and interpretation for production engineers, completion engineers, well services engineers, well integrity management engineers, drilling/completion/intervention engineers and other technical staff.

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.

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.

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:

Dr. John Petrus, PhD, MSc, BSc, is a **Senior Reservoir Engineer & Geologist** with over **30 years** of **onshore & offshore** experience within the **Oil & Gas**, **Refinery** and **Petroleum** industries. His wide experience covers in the areas of **Advanced Well Testing & Interpretation**, **Production Technology** & Engineering, **Well Completions**, **Well Logs**, **Well Stimulation** & **Production Logging**, **Well Completion** Design & Operation, Well Surveillance, **Well Testing**, **Well Stimulation** & Control and **Workover** Planning, **Completions & Workover**, Hole Cleaning & Logging, Servicing and **Work-Over** Operations, **Wellhead** Operations, Maintenance & Testing, Petrophysics/Interpretation of Well Composite, **Reservoir & Tubing** Performance, Practical **Reservoir** Engineering, Clastic **Exploration & Reservoir Sedimentology**, **Carbonate Reservoir Characterization** & Modeling, **Seismic Interpretation**, **Mapping & Reservoir** Modelling, **Reservoir Geology**, Integrating **Geoscience** into **Carbonate Reservoir** Management, **Faulted & Fractured Reservoirs**, **Fractured Hydrocarbon Reservoirs**, Analyses, Characterisation & Modelling of **Fractured Reservoirs & Prospects**, **Fracture Reservoir** Modeling Using **Petrel**, **Reservoir** Engineering Applied Research, **Artificial Lift**, **Artificial Lift System** Selection & Design, Electrical Submersible Pumps (**ESP**), Enhance Oil Recovery (**EOR**), **Hydraulic Fracturing**, **Sand Control** Techniques, **Perforating** Methods & Design, **Perforating** Operations, **Petroleum** Exploration & Production, **Hydrocarbon Exploration** & Production, Exploration & Production, **Play Assessment & Prospect Evaluation**, **Formation** Evaluation, **Petroleum Engineering** Practices, **Petroleum** Hydrogeology & Hydrodynamics, **Project** Uncertainty, Decision Analysis & Risk Management, **Decision Analysis & Uncertainty** Management, **Exploration & Development Geology**, **Sedimentology & Sequence Stratigraphy**, **Structural Interpretation** in Exploration & Development, **Petrel Geology**, **Geomodeling**, **Structural Geology**, **Applied Structural Geology** in Hydrocarbon Exploration, **Petrophysics**, **Geology** of the Oil & Gas Field, **Geophysics**, **Geothermal**, **Geochemical & Geo-Engineering** and Drilling Applied Research, Field Geological Outcrop Mapping & Digital Cartography, **Geological** Modelling, **Geoscience** Management in E&P, Geoscience Modelling, Geological Mapping, **Structural Geology-Tectonics**, **Structural** Analysis, **Tectonic Modelling** and Numerical Simulation of **Fractured Prospects & Reservoirs**, **Fracture Network** Analysis & Modelling, **Prospect** Generation, Global Networking, Research and Technology Development Management for **Fault & Fracture Analyses** & Modelling, **Fracture** Modelling, **Dynamic** Modelling, **Field Development** Planning, **Water Injection** Planning, Stereophotogrammetry, Fault Mapping, GPS Survey, 2D & 3D **Seismic Acquisition** & Processing, **3D Seismic** Surveys & Mapping, 3D GIS, GMAP, **Sandbox** Modelling, Sedimentological Logging, GR Logging, Surface & Subsurface 3D Modelling, Best Practices Management System (**BPMS**), Subsurface Work for Energy Projects, Digitalization Projects, **Structural Model** using **Petrel**, G&G Seismic & **Well Data** Modelling, **GIS System** Management, **Database** Management, Strategic Planning, Best Practices and Workflow, **Quality** Management, **Project** Management and **Risk Assessment** & Uncertainty Evaluation. Further, he is also well-versed in **seismic interpretation**, **mapping** & **reservoir modelling tools** like **Petrel** software, **LandMark**, **Seisworks**, **Geoframe**, **Zmap** and has extensive knowledge in MSDos, Unix, **AutoCAD**, MAP, Overlay, Quicksurf, 3DStudio, **Esri ArcGIS**, Visual Lisp, Fortran-77 and Clipper. Moreover, he is a world **expert** in **analysis** and **modelling** of **fractured prospects** and **reservoirs** and a **specialist** and **developer** of **fracture modelling software tools** such as FPDM, FMX and DMX Protocols.

During his career life, Dr. Petrus held significant positions and dedication as the **Executive Director**, **Senior Geoscience Advisor**, **Exploration Manager**, **Project Manager**, **Manager**, **Chief Geologist**, **Chief** of **Exploration**, **Chief** of **Geoscience**, **Senior Geosciences Engineer**, **Senior Explorationist**, **Senior Geologist**, **Geologist**, **Senior Geoscientist**, **Geomodeller**, **Geoscientist**, **CPR Editor**, **Resources Auditor**, **Project Leader**, **Technical Leader**, **Team Leader**, **Scientific Researcher** and **Senior Instructor/Trainer** from various international companies and universities such as the Dragon Oil Holding Plc., ENOC, MENA, ENI Group of Companies, Ocre Geoscience Services (OGS), Burren RPL, Ministry of Oil-Iraq, Eni Corporate University, Standford University, European Universities, European Research Institutes, NorskHydro Oil Company, Oil E&P Companies, just to name a few.

Dr. Petrus has a **PhD** in **Geology** and **Tectonophysics** and **Master**'**s** and **Bachelor**'**s** degree in **Earth Sciences** from the **Utrecht University**, **The Netherlands**. Further, he is a **Certified Instructor/Trainer**, a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management** (**ILM**), a Secretary and Treasurer of Board of Directors of Multicultural Centre, Association Steunfonds SSH/SSR and Founding Member of Sfera Association. He has further published several scientific publications, journals, research papers and books and delivered numerous trainings, workshops, courses, seminars and conferences internationally.

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 Well Testing:*** *The Importance in Reservoir Management*
0930 – 0945	*Break*
0945 – 1030	***Reservoir Fluids & Flow Regimes:*** *The Different Fluid Types & Flow Patterns in Reservoirs*
1030 – 1130	***Basics of Well Test Analysis:*** *Pressure Transient Analysis & its Application*
1130 – 1230	***Wellbore Dynamics & Temperature Effects:*** *How Wellbore Conditions Affect Test Data*
1230 – 1245	*Break*
1245 – 1330	***Well Test Interpretation Software:*** *Familiarization with Industry-Standard Software Tools*
1330 – 1420	***Safety Considerations in Well Testing:*** *Emphasizing Safety Protocols & Environmental Considerations*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Buildup & Drawdown Tests:*** *Detailed Analysis & Interpretation*
0830 – 0930	***Pressure Derivative Analysis:*** *Techniques & Applications*
0930 – 0945	*Break*
0945 – 1100	***Type Curve Analysis:*** *Utilizing Type Curves in Well Test Interpretation*
1100 – 1230	***Rate Transient Analysis:*** *Techniques for Analyzing Variable Rate Tests*
1230 – 1245	*Break*
1245 – 1330	***Well Test Design & Planning:*** *Key Considerations for Effective Test Design*
1330 – 1420	***Case Studies:*** *Real-World Examples of Pressure Transient Analysis*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***Interference Testing:*** *Theory, Design & Interpretation*
0830 – 0930	***Pulse Testing:*** *The Methodology & Applications*
0930 – 0945	*Break*
0945 – 1100	***Multi-Rate Testing:*** *Techniques for Analyzing Tests with Variable Rates*
1100 – 1230	***Wellbore Storage & Skin Effect:*** *Identification & Analysis*
1230 – 1245	*Break*
1245 – 1330	***Gas Well Testing:*** *Specific Considerations & Methodologies*
1330 – 1420	***Advanced Software Tools:*** *Utilizing Complex Interpretation Software*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

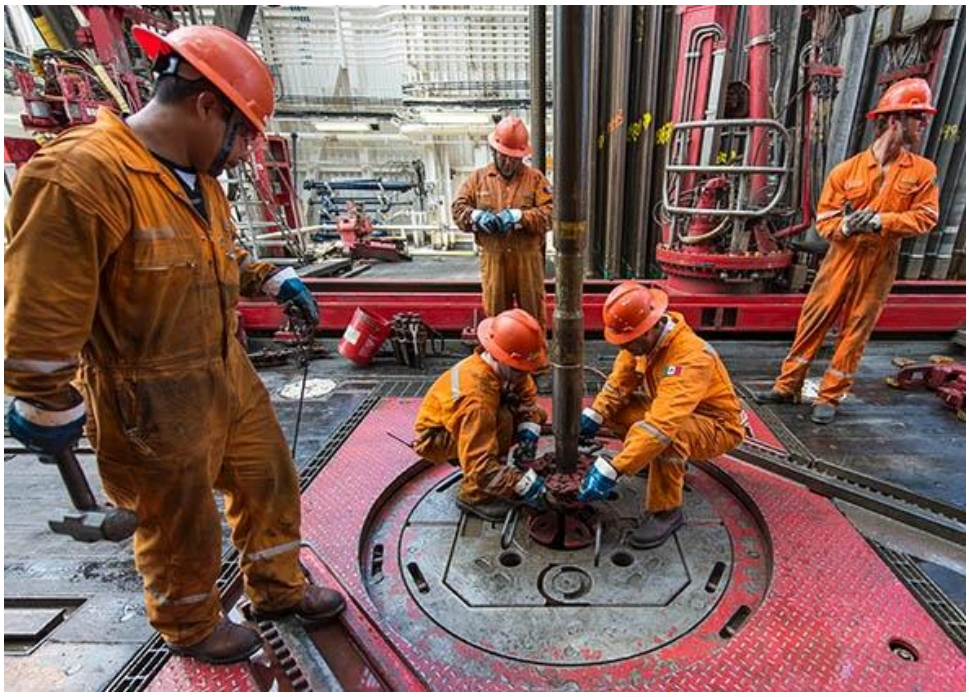
0730 – 0830	***Naturally Fractured Reservoirs:*** *Testing & Interpretation Challenges*
0830 – 0930	***Horizontal Well Testing:*** *Specific Methodologies & Interpretations*
0930 – 0945	*Break*
0945 – 1100	***Reservoir Boundaries & Heterogeneities:*** *Identification & Impact on Tests*
1100 – 1230	***Pressure Transient Behavior in Different Reservoir Types:*** *Analysis of Various Reservoir Models*
1230 – 1245	*Break*
1245 – 1330	***Integration of Well Test Data with Reservoir Simulation:*** *Enhancing Reservoir Models with Test Data*
1330 – 1420	***Group Work on Complex Reservoirs:*** *Applying Concepts to Hypothetical Scenarios*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0830	***Integrated Reservoir Management:*** *Using Well Test Data for Reservoir Management Decisions*
0830 – 0930	***Real-Time Well Test Data Interpretation:*** *Latest Trends & Technologies*
0930 – 0945	*Break*
0945 – 1030	***Pressure Transient Analysis in Unconventional Reservoirs:*** *Specific Challenges & Solutions*
1030 – 1130	***Enhanced Oil Recovery (EOR) & Well Testing:*** *Impact of EOR on Well Test Interpretation*
1130 – 1230	***Data Management & Reporting:*** *Best Practices for Data Handling & Reporting*
1230 – 1245	*Break*
1245 - 1345	***Future of Well Testing:*** *Emerging Technologies & Methodologies*
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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