COURSE OVERVIEW DE0146-4D
Fundamentals of Formation Evaluation

Course Title
Fundamentals of Formation Evaluation

Course Date/Venue
November 18-21, 2024/Jubail Hall, Signature Al Khobar Hotel, Al Khobar, KSA

Course Reference
DE0146-4D

2.4 CEUs (24 PDHs) AWARD

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 Fundamentals of Formation Evaluation. It covers the formation evaluation and its significance in the oil and gas industry; the key formation evaluation parameters, roles and responsibilities of formation evaluation professionals and different formation evaluation methods; the well logging techniques and its applications; the types of well logs, interpreting well logs and integrating well logs for formation evaluation; and the advanced well logging techniques, core sampling techniques, core analysis methods and integrating core analysis data with well log data.

Further, the course will also discuss the petrophysics and its role in formation evaluation; the petrophysical properties, petrophysical analysis techniques and interpretation and estimate rock properties from well logs and core data; the formation evaluation challenges in unconventional reservoirs and specialized well logging and analysis techniques; and the reservoir characterization and resource estimation in unconventional reservoirs.

During this interactive course, participants will learn the reservoir fluid analysis, fluid sampling techniques and incorporating reservoir fluid data into formation evaluation; the formation pressure evaluation, pressure measurement techniques, analysis and interpretation of formation pressure data; the well testing techniques and well testing data analysis; the interpretation and integration of well testing and production data for formation evaluation; the reservoir characterization and integrating all formation evaluation data for reservoir characterization; and the reservoir modelling and simulation, uncertainty analysis and risk assessment in formation evaluation.

Course Objectives

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

- Apply and gain a basic knowledge on formation evaluation
- Discuss formation evaluation and its significance in the oil and gas industry
- Recognize the key formation evaluation parameters, roles and responsibilities of formation evaluation professionals and different formation evaluation methods
- Carryout well logging techniques and its applications, identify the types of well logs, interpret well logs and integrate well logs for formation evaluation
- Employ advanced well logging techniques, core sampling techniques, core analysis methods and integrating core analysis data with well log data
- Discuss petrophysics and its role in formation evaluation and identify petrophysical properties
- Apply petrophysical analysis techniques and interpretation and estimate rock properties from well logs and core data
- Identify formation evaluation challenges in unconventional reservoirs and apply specialized well logging and analysis techniques
- Describe reservoir characterization and resource estimation in unconventional reservoirs
- Carryout reservoir fluid analysis, fluid sampling techniques and incorporating reservoir fluid data into formation evaluation
- Employ formation pressure evaluation, pressure measurement techniques and analysis and interpretation of formation pressure data
- Carryout well testing techniques, well testing data analysis and interpretation and integration of well testing and production data for formation evaluation
- Discuss reservoir characterization and integrate all formation evaluation data for reservoir characterization
- Illustrate reservoir modelling and simulation including uncertainty analysis and risk assessment in formation evaluation

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 a basic and up-to-date overview of formation evaluation for geologists, reservoir engineers, geophysicists, technical assistants and other technical staff.

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:

Mr. Sigve Hamilton, MSc, BSc, is a **Senior Drilling & Petroleum Engineer** with over **20 years** of **onshore & offshore** experience within the **Oil & Gas**, **Refinery** and **Petroleum** industries. His specialization widely covers in the areas of **Advanced Drilling** Operation Management, **Drilling Fluid** Technology, **Directional & Horizontal Drilling**, **Drilling** Optimization & Well Planning, **Drilling** Operation Management, **Drilling** Control & Operation, **Drilling & Completion** Design, **Drilling & Stuck Pipe** Prevention, **Gas Lift** Operations, Electrical Submersible Pumps Application, **ESP** Assembly & Disassembly Techniques, **ESP** Modeling & Design, **ESP** Construction & Operational Monitoring, **ESP** Troubleshooting & Maintenance, **Gas Lift** Design & Technology, **Production** Technology, **Production Logging**, **Well Logging**, **Well Test** Analysis, **Well Testing** Procedures & Evaluation, **Well** Performance & **Control**, **Wellhead** Operations, **Wellhead** Design, **Tubing Design & Casing**, **Well Production** Optimization, **Well Control & Blowout** Prevention, **Coiled Tubing** Technology, **Coring & Core** Analysis, **Core & Log Integration**, **Core Logging**, **Carbonate & Seismic Sequence** Stratigraphy, **Completion & Casing** Design, **CO_2 & Injection** System, **Fracture** Characterization & Modelling, **PVT** Analysis, **Fluid** Mechanics, **Fluid** Dynamics, Water Shutoff, **Water Injection** Technology, **Water Flooding**, **Petroleum** Engineering, **Petroleum Geology**, **Petroleum** Physics, **Petroleum** Data Management, **Petroleum** Exploration, **Reservoir** Engineering & Management, **Reservoir** Simulation, **Reservoir** Geophysics, **Naturally Fractured Reservoir**, **Streamline** Simulation, **Carbonate Rocks & Siliciclastic Rocks**, Applied **Rock Mechanics**, **Rock Physics**, Sedimentology & Sequence Stratigraphy, Special Core Analysis, **Artificial Lift** Design, **Enhanced Oil Recovery**, **Subsurface Production** Operation, **Rig** Inspection, **Logging**, **Hydraulic & Pneumatic**, Heterogeneity Modelling for Reservoir Characterization, Prosper, 3D Geological Modelling, Property & Heterogeneity Modelling, IRAP RMS Streamlines, Grid Design & Upscaling for Reservoir Simulation and MBAL, Prosper and GAP Software,

During his career life, Mr. Hamilton held significant positions and dedication as the **Petroleum Engineer**, **Drilling Engineer**, **Petroleum/QHSE Engineer**, **Reservoir Engineer**, **Field Manager**, **Laboratory Engineer**, **Mudlogging Geologist**, **Geoscientist, Petroleum/Production Engineer & Consultant**, **Project Engineer/Risk Advisor**, **Petroleum Consultant/Advisor**, **Inspector/Study Leader** and **Senior Instructor/Lecturer** from various companies and universities such as the University of Akureyri (UNAK), Stavanger Offshore Technical School, Akademiet, Peteka, FMC Technologies, Gerson Lehrman Group, Ocean Rig, Oilfield Technology Group, Talisman, IOR Chemco, Geoservices, ResLab and Roxar.

Mr. Hamilton has a **Master's** degree in **Petroleum Engineering** and a **Bachelor's** degree in **Reservoir Engineering** from **The University of Stavanger**, **Norway**. Further, he is a **Certified Instructor/Trainer** and delivered numerous trainings, workshops, courses, seminars and conferences internationally.

Training Methodology

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Workshops & Work Presentations
30% Case Studies & Practical Exercises
20% Software, Simulators & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Fee

US$ 6,750 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 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, 18th of November 2024***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 1030	***Introduction to Formation Evaluation*** *Formation Evaluation & Its Significance in the Oil & Gas Industry ● Key Formation Evaluation Parameters ● Roles & Responsibilities of Formation Evaluation Professionals ● Different Formation Evaluation Methods*
1030 – 1045	*Break*
1045 – 1200	***Well Logging Techniques*** *Well Logging & Its Applications ● Types of Well Logs: Resistivity, Porosity, Sonic, Density, & Neutron Logs • Interpretation of Well Logs • Integration of Well Logs for Formation Evaluation*
1200 – 1300	***Advanced Well Logging Methods*** *Advanced Well Logging Techniques: Image Logs, Dip Logs, & NMR Logs ● Interpretation & Analysis of Advanced Well Logs*
1300 – 1315	*Break*
1315 - 1420	***Advanced Well Logging Methods (cont'd)*** *Case Studies Showcasing the Application of Advanced Well Logs in Formation Evaluation*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2:	Tuesday, 19th of November 2024
0730 – 0930	***Core Analysis & Sampling*** *Core Analysis & Its Importance in Formation Evaluation ● Core Sampling Techniques & Considerations*
0930 – 0945	*Break*
0945 – 1130	***Core Analysis & Sampling (cont'd)*** *Core Analysis Methods: Porosity, Permeability, & Fluid Saturation Measurements ● Integration of Core Analysis Data with Well Log Data*
1130 – 1230	***Petrophysics & Rock Properties*** *Petrophysics & Its Role in Formation Evaluation ● Petrophysical Properties: Porosity, Water Saturation, & Permeability*
1230 – 1245	*Break*
1245 - 1420	***Petrophysics & Rock Properties (cont'd)*** *Petrophysical Analysis Techniques & Interpretation ● Estimating Rock Properties from Well Logs & Core Data*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

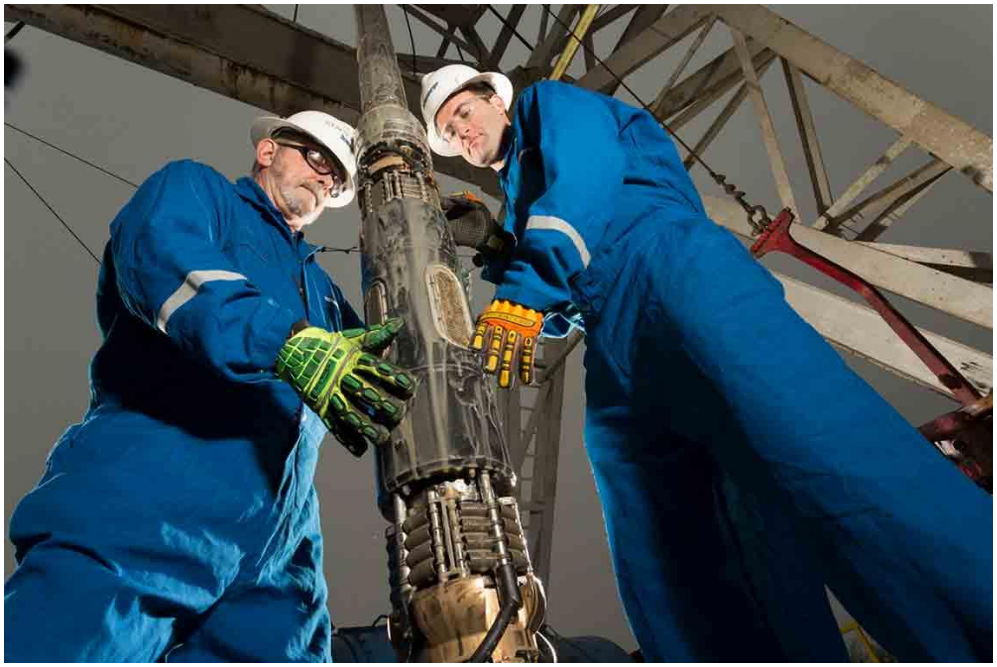
Day 3:	Wednesday, 20th of November 2024
0730 – 0930	***Formation Evaluation in Unconventional Reservoirs*** *Formation Evaluation Challenges in Unconventional Reservoirs (e.g., Shale Gas, Tight Oil) ● Specialized Well Logging & Analysis Techniques for Unconventional Reservoirs*
0930 – 0945	*Break*
0945 – 1130	***Formation Evaluation in Unconventional Reservoirs (cont'd)*** *Reservoir Characterization & Resource Estimation in Unconventional Reservoirs*
1130 – 1230	***Reservoir Fluid Analysis*** *Fluid Sampling Techniques & Considerations*
1230 – 1245	*Break*
1245 - 1420	***Reservoir Fluid Analysis (cont'd)*** *Analysis of Fluid Samples: Composition, Viscosity, Density, & Phase Behavior ● Incorporating Reservoir Fluid Data into Formation Evaluation*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4:	Thursday, 21st of November 2024
0730 – 0930	***Formation Pressure Evaluation*** *Pressure Measurement Techniques: Wireline, Mud Logging, & Formation Testing*
0930 – 0945	*Break*
0945 – 1130	***Formation Pressure Evaluation (cont'd)*** *Analysis & Interpretation of Formation Pressure Data ● Determining Reservoir Pressure & Pressure Gradients*
1130 – 1230	***Well Testing & Production Data Analysis*** *Well Testing & Its Role in Formation Evaluation ● Well Testing Techniques: Drawdown Tests, Buildup Tests, & Interference Tests • Analysis & Interpretation of Well Testing Data ● Integration of Well Testing & Production Data for Formation Evaluation*
1230 – 1245	*Break*

1245 - 1345	***Reservoir Characterization & Evaluation*** *Reservoir Characterization ● Integration of All Formation Evaluation Data for Reservoir Characterization • Reservoir Modeling & Simulation ● Uncertainty Analysis & Risk Assessment in Formation Evaluation*
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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