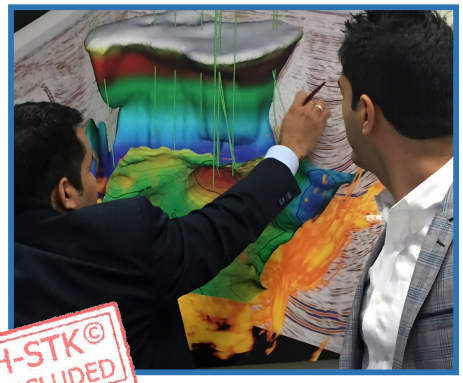
COURSE OVERVIEW DE0434
Geophysics Interpretation

Course Title
Geophysics Interpretation

Course Date/Venue
Session 1: February 23-27, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
Session 2: August 25-29, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



Course Reference
DE0434

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

Course Date/Venue

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

This course is designed to provide participants with a detailed and up-to-date overview of Geophysics Interpretation. It covers the role of geophysical interpretation in exploration, appraisal and development; the principles of seismic data acquisition and processing; the fundamentals of seismic wave propagation, reflection and refraction; the seismic attributes including amplitude, phase, frequency and others and their relevance to interpreting geological features; the basic well logging and integration with seismic; the seismic stratigraphy and facies analysis; interpreting the 3D seismic volumes including visualization tools and methods for enhancing interpretational accuracy; the seismic attribute analysis for reservoir characterization; and the structural interpretation and fault analysis.

During this interactive course, participants will learn the quantitative interpretation and inversion techniques, time-lapse (4D) seismic interpretation and integrating geological models with seismic interpretation; interpreting the data for unconventional resources; the shale gas, tight oil and coalbed methane; the emerging technologies and methodologies in geophysical interpretation; assessing the risks and uncertainties in geophysical interpretation including probabilistic approaches and sensitivity analysis; and the best practices for effective collaboration between geophysicists, geologists, reservoir engineers and other disciplines in integrated interpretation projects.

Course Objectives

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

- Apply and gain an in-depth knowledge on geophysics interpretation
- Discuss the geophysical interpretation in the oil and gas industry including its role in exploration, appraisal and development
- Explain the principles of seismic data acquisition and processing including the fundamentals of seismic wave propagation, reflection and refraction
- Recognize seismic attributes including amplitude, phase, frequency and others and their relevance to interpreting geological features
- Carryout basic well logging techniques and integration with seismic as well as seismic stratigraphy and facies analysis
- Interpret 3D seismic volumes including visualization tools and methods for enhancing interpretational accuracy
- Apply seismic attribute analysis for reservoir characterization and structural interpretation and fault analysis
- Carryout quantitative interpretation and inversion techniques, time-lapse (4D) seismic interpretation and integrating geological models with seismic interpretation
- Interpret data for unconventional resources covering shale gas, tight oil and coalbed methane
- Explore the emerging technologies and methodologies in geophysical interpretation including machine learning and artificial intelligence
- Assess risks and uncertainties in geophysical interpretation including probabilistic approaches and sensitivity analysis
- Apply best practices for effective collaboration between geophysicists, geologists, reservoir engineers and other disciplines in integrated interpretation projects

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 on geophysics interpretation for who are or will be supporting delineation, development, and/or production of oil and gas fields. The course is also highly applicable to geologists, engineers, and managers engaged in reservoir management of oil and gas field and who use, or need to use, geophysics.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

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**. 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.

Course Fee

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 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 **40 years** of **Offshore & Onshore** extensive experience within the **Oil**, **Gas & Petroleum** industries**.** His area of expertise include **Cased Hole Logging**, 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, **Fractured Reservoir** Classification & Evaluation, Screening of Oil Reservoirs for **Enhanced Oil Recovery**, **Oil Reservoir** Evaluation & Estimation, **Reserves & Resources**, **Reserves Estimation** & **Uncertainty**, **Reserve** Evaluation, **OIP Estimation & Range** of **Uncertainty**, **Reservoir** Characterization, **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 & Heavy Oil, **Reservoir** Volumetrics, Water Drive **Reservoir**, **Unconventional Resource & Reserves** Evaluation, **Oil & Gas Reserves** Estimation, **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**, **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 Supply & Demand**, **Oil Contracts**, **Government Legislation & Oil Contractual Agreements**, **Oil Projects** & Their Feasibility (revenue and profitability), 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**, **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.

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 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	***Introduction to Geophysical Interpretation:*** *Overview of Geophysical Interpretation in the Oil & Gas Industry, including its Role in Exploration, Appraisal & Development*
0930 – 0945	*Break*
0945 – 1100	***Principles of Seismic Data Acquisition & Processing:*** *The Basics of Seismic Data Acquisition on Land & at Sea & the Key Processing Steps that Prepare Data for Interpretation*
1100 – 1230	***Principles of Seismic Data Acquisition & Processing:*** *The Basics of Seismic Data Acquisition on Land & at Sea & the Key Processing Steps that Prepare Data for Interpretation (cont'd)*
1230 – 1245	*Break*
1245 - 1420	***Seismic Reflection Principles:*** *Fundamentals of Seismic Wave Propagation, Reflection & Refraction & How these Principles Underpin the Interpretation of Seismic Data*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Attributes of Seismic Data:*** *Seismic Attributes, including Amplitude, Phase, Frequency & others & Their Relevance to Interpreting Geological Features*
0930 – 0945	*Break*
0945 – 1100	***Basic Well Logging & Integration with Seismic:*** *Well Logging Techniques & How Well Log Data are Integrated with Seismic Data for Enhanced Subsurface Interpretation*

1100 – 1200	***Seismic Stratigraphy & Facies Analysis:*** *Basic Concepts of Seismic Stratigraphy, including Sequence Stratigraphy Principles & Facies Analysis Using Seismic Data*
1200 – 1215	*Break*
1330 - 1420	***3D Seismic Interpretation:*** *Techniques & Challenges in Interpreting 3D Seismic Volumes, including Visualization Tools & Methods for Enhancing Interpretational Accuracy*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Seismic Attribute Analysis for Reservoir Characterization:*** *The Use of Seismic Attributes for Reservoir Characterization, including Direct Hydrocarbon Indicators (DHIs)*
0930 – 0945	*Break*
0945 – 1100	***Structural Interpretation & Fault Analysis:*** *Methods for Interpreting Structural Features such as Faults & Folds Within Seismic Data, including Implications for Hydrocarbon Trapping Mechanisms*
1100 – 1230	***Quantitative Interpretation & Inversion Techniques:*** *Quantitative Interpretation Techniques, including Seismic Inversion, for Estimating Reservoir Properties such as Porosity & Saturation*
1230 – 1245	*Break*
1245 – 1420	***Time-Lapse (4D) Seismic Interpretation:*** *The Principles & Applications of Time-Lapse Seismic Interpretation for Monitoring Reservoir Changes Over Time*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0930	***Integrating Geological Models with Seismic Interpretation:*** *Techniques for Integrating Geological Models with Seismic Interpretation to Create Consistent Subsurface Models*
0930 – 0945	*Break*
0945 – 1100	***Case Studies in Seismic Interpretation:*** *Review of Case Studies Illustrating the Application of Seismic Interpretation in Various Geological Settings & Hydrocarbon Exploration Scenarios*
1100 – 1230	***Interpretation of Unconventional Resources:*** *Special Considerations in Interpreting Data for Unconventional Resources, such as Shale Gas, Tight Oil & Coalbed Methane*
1230 – 1245	*Break*
1245 – 1420	***Emerging Technologies in Geophysical Interpretation:*** *Exploration of Emerging Technologies & Methodologies in Geophysical Interpretation, including Machine Learning & Artificial Intelligence*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Four*

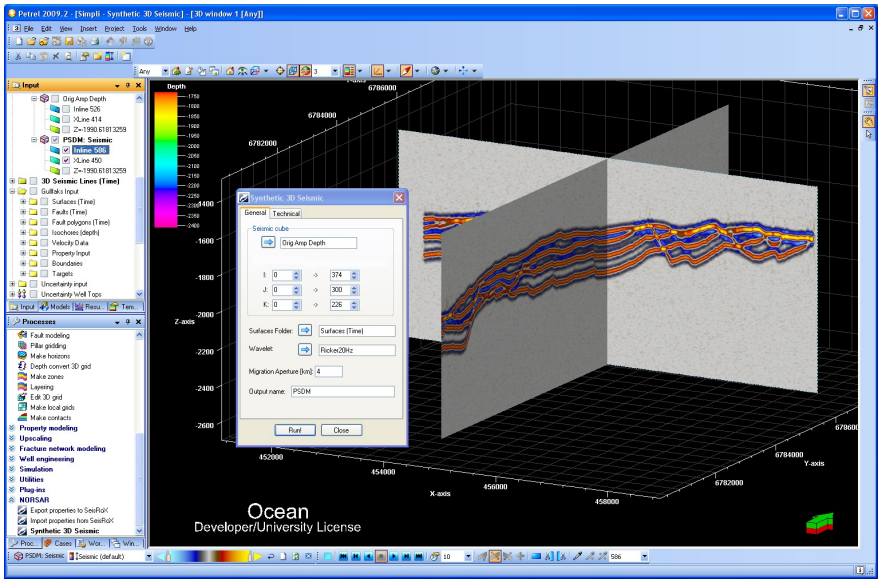
Day 5

0730 – 0930	***Risk Assessment & Uncertainty in Interpretation:*** *Methods for Assessing Risks & Uncertainties in Geophysical Interpretation, including Probabilistic Approaches & Sensitivity Analysis*
0930 – 0945	*Break*

0945 – 1045	***Collaboration & Integration Across Disciplines:*** *Best Practices for Effective Collaboration Between Geophysicists, Geologists, Reservoir Engineers, & Other Disciplines in Integrated Interpretation Projects*
1045 - 1200	***Collaboration & Integration Across Disciplines:*** *Best Practices for Effective Collaboration Between Geophysicists, Geologists, Reservoir Engineers, & Other Disciplines in Integrated Interpretation Projects (cont'd)*
1200 – 1215	*Break*
1215 – 1345	***Workshop: Hands-On Seismic Interpretation Exercise:*** *Interactive Workshop Where Participants Engage in Hands-On Seismic Interpretation Exercises Using Real Data, Focusing on Integrating Various Interpretation Techniques Covered During the Course*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulator (Hands-on Practical Sessions)

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the "Petrel" software.



Petrel Software

Course Coordinator

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