

COURSE OVERVIEW DE0520
4D Seismic Analysis

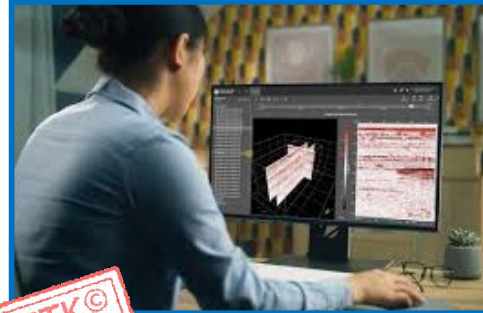
Course Title

4D Seismic Analysis

Course Date/ Venue

Session 1: June 29-July 03, 2025/Boardroom
 1, Elite Byblos Hotel Al Barsha,
 Sheikh Zayed Road, Dubai, UAE

Session 2: November 10-14, 2025/Fujairah
 Meeting Room, Grand Millennium
 Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

DE0520

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



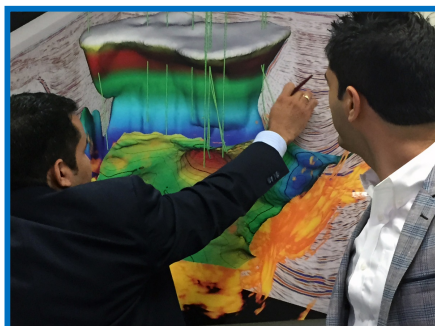
Course Description



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 an up-to-date overview of reservoir characterization with seismic – inversion feasibility and petroelastic modeling (geophysics). It covers the color display and 3D visualization seismic attributes; the spectral decomposition and thin bed tuning; the complex trace attributes; the features of the horizon and formation attributes; the geometric attributes; and the attribute expression of structure and stratigraphy.



The course will further discuss the edge preserving smoothing; the inversion for acoustic impedance; the multi-attribute analysis tools; the multi-attribute workflows for reservoir characterization; the 3D texture analysis; the 3D object detection; and the impact of data quality on seismic attributes.

Course Objectives

Upon the successful completion of the course, participants will be able to:-

- Apply and gain a good working knowledge on reservoir characterization with seismic – inversion feasibility and petroelastic modeling (geophysics)
- Analyze the color display and 3D visualization seismic attributes
- Discuss spectral decomposition and thin bed tuning and complex trace attributes
- Identify the features of the horizon and formation attributes and geometric attributes
- Determine the attribute expression of structure and stratigraphy and edge preserving smoothing
- Discuss the inversion for acoustic impedance and identify the multi-attribute analysis tools
- Apply the multi-attribute workflows for reservoir characterization and carry-out 3D texture analysis
- Implement acquainted with the 3D object detection and emphasize the impact of data quality on seismic attributes

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Howard 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 significant aspects and considerations of reservoir characterization with seismic – inversion feasibility and petroelastic modeling (geophysics) for interpreters, geophysicists, geologists, technical support personnel, seismic processors, exploration and data processing managers, and data acquisition managers.

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 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: -

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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.

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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.

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:



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 **Tubular & Pipe Handling, Tubular Strength, Casing & Tubing Design, Production/Injection Loads** for Casing Strings & Tubing, **Drilling Loads, Drilling & Production Thermal Loads, Well Architecture, Wellhead Integrity, Well Integrity & Artificial Lift, Well Integrity Management, Well Completion & Workover**, Applied

Drilling Practices, Horizontal Drilling, Petroleum Production, 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	Introduction
0900 – 0930	Color Display & 3D Visualization
0930 – 0945	Break
0945 – 1100	Spectral Decomposition & Thin Bed Tuning
1100 – 1230	Spectral Decomposition & Thin Bed Tuning (cont'd)
1230 – 1245	Break
1245 – 1420	Complex Trace Attributes
1420 - 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0930	Horizon & Formation Attributes
0930 – 0945	Break
0945 – 1100	Geometric Attributes
1100 – 1230	Attribute Expression of Structure and Stratigraphy
1230 – 1245	Break
1245 – 1420	Attribute Expression of Structure & Stratigraphy (cont'd)
1420 - 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0930	Edge Preserving Smoothing
0930 – 0945	Break
0945 – 1100	Inversion for Acoustic Impedance
1100 – 1230	Inversion for Acoustic Impedance (cont'd)
1230 – 1245	Break
1245 – 1420	Multi-Attribute Analysis Tools
1420 - 1430	Recap
1430	Lunch & End of Day Three

Day 4

0730 – 0930	Multi-Attribute Workflows for Reservoir Characterization
0930 – 0945	Break
0945 – 1100	Multi-Attribute Workflows for Reservoir Characterization (cont'd)
1100 – 1230	3D Texture Analysis
1230 – 1245	Break
1245 – 1420	3D Object Detection
1420 - 1430	Recap
1430	Lunch & End of Day Four

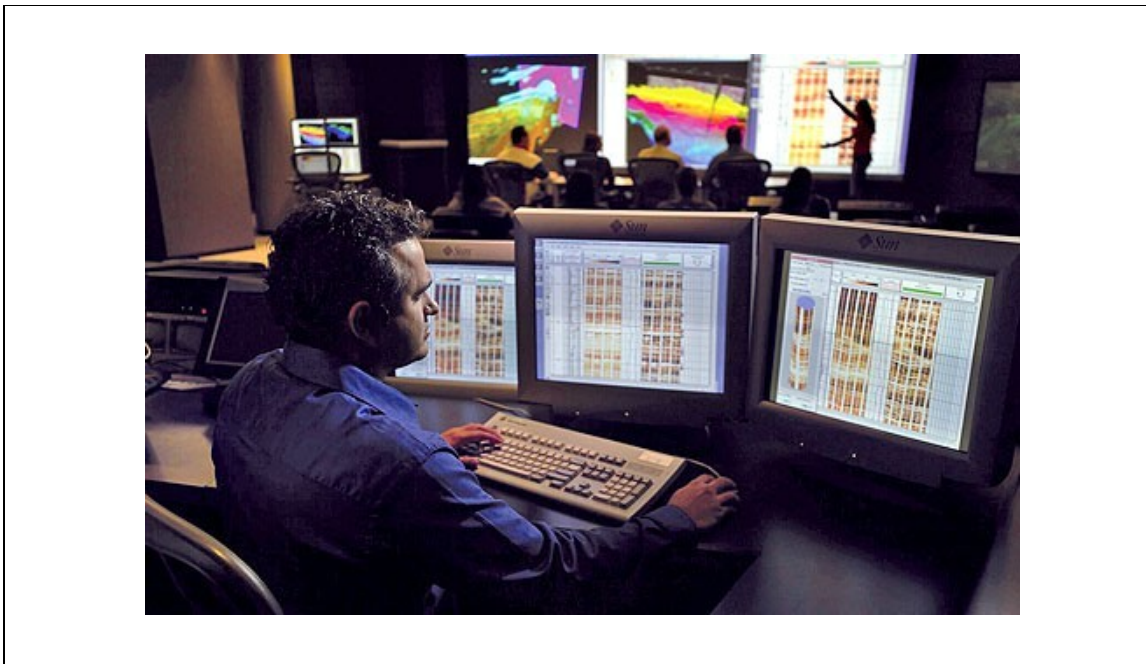


Day 5

0730 – 0930	<i>Impact of Data Quality on Seismic Attributes</i>
0930 – 0945	<i>Break</i>
0945 – 1100	<i>Impact of Data Quality on Seismic Attributes (cont'd)</i>
1100 – 1230	<i>Summary of the Course</i>
1230 – 1245	<i>Break</i>
1245 – 1345	<i>Summary, Open Forum & Closure</i>
1345 – 1400	<i>Course Conclusion</i>
1400 – 1415	<i>POST-TEST</i>
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

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