COURSE OVERVIEW DE0656
Geophysical Reservoir Characterization

Course Title
Geophysical Reservoir Characterization

Course Date/Venue
July 13-17, 2026/Online Virtual Training

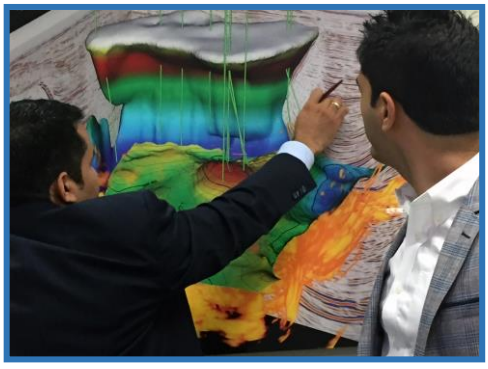
Course Reference
DE0656

Course Duration/Credits
Five days/2.75 CEUs/27.5 PDHs

Course Description

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 Geophysical Reservoir Characterization. It covers the role of geophysical reservoir characterization in field development planning and its importance in asset management; the basics of petroleum geology, geophysics in reservoir engineering and seismic survey fundamentals; the seismic wave propagation, reservoir properties and seismic data processing basics; the seismic interpretation principles, structural interpretation and time-to-depth conversion; the seismic attributes, mapping and visualization and advanced seismic attributes; and the lithology and fluid prediction, acoustic impedance, inversion and rock physics fundamentals.



During this interactive course, participants will learn the petrophysical integration, reservoir heterogeneity and static reservoir modelling; the seismic data integration in models, geostatistics basics and dynamic reservoir concepts; the 4D seismic (time-lapse) and uncertainty and risk analysis; the field development planning and reservoir monitoring techniques; the heterogeneity in carbonates, fractures and vugs, seismic imaging challenges and characterization approaches; and the machine learning applications, automated seismic interpretation and big data in reservoir characterization.

Course Objectives/Outcomes & Benefits for the Participants

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

- Apply and gain an in-depth knowledge on geophysical reservoir characterization
- Define the role of geophysical reservoir characterization in field development planning and its importance in asset management
- Discuss the basics of petroleum geology, geophysics in reservoir engineering and seismic survey fundamentals
- Describe seismic wave propagation, reservoir properties and seismic data processing basics
- Apply seismic interpretation principles, structural interpretation and time-to-depth conversion
- Recognize seismic attributes, mapping and visualization and advanced seismic attributes
- Interpret lithology and fluid prediction, acoustic impedance, inversion and rock physics fundamentals
- Carryout petrophysical integration, reservoir heterogeneity and static reservoir modeling
- Apply seismic data integration in models, geostatistics basics and dynamic reservoir concepts
- Describe 4D seismic (time-lapse) and apply uncertainty and risk analysis, field development planning and reservoir monitoring techniques
- Determine heterogeneity in carbonates, fractures and vugs, seismic imaging challenges and characterization approaches
- Carryout machine learning applications, automated seismic interpretation and big data in reservoir characterization

Who Should Attend

This course provides an overview of all significant aspects and considerations of geophysical reservoir characterization for geoscientists and geophysicists, reservoir and petroleum engineers, exploration and production (E&P) professionals, geologists and petrophysicists, data analysts and interpretation specialists and other technical staff.

Course Fee

US$ 4,000 per Delegate + **VAT**.

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

Haward's 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**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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 **2.75 CEUs** (Continuing Education Units) or **27.5 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 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 **30 years** of **Offshore & Onshore** extensive experience within the **Oil**, **Gas & Petroleum** industries**.** His area of expertise include **Reserves & Resources**, **Reserves Estimation & Uncertainty**, **Reservoir** Characterization, **Unconventional Resource & Reserves** Evaluation, **Oil & Gas Reserves** Estimation, Methods for **Aggregation of Reserves & Resources**, **Fractured Reservoir** Classification & Evaluation, **Sequence Stratigraphy**, **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**, 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, Screening of Oil Reservoirs for **Enhanced Oil Recovery**, **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 Reservoir** Evaluation & Estimation, **Oil Supply & Demand**, **Oil Contracts**, **Government Legislation & Oil Contractual Agreements**, **Oil Projects** & Their Feasibility (revenue and profitability), **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 and Heavy Oil, **Reservoir** Volumetrics, Water Drive Reservoir, **Reserve** Evaluation, 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**, **Cased Hole 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.

Virtual Training (If Applicable)

If this course is delivered online as a Virtual Training, the following limitations will be applicable:-

Certificates	Only soft copy certificates will be issued to participants through Haward's Portal. This includes Wallet Card Certificates if applicable
Training Materials	Only soft copy Training Materials (PDF format) will be issued to participant through the Virtual Training Platform
Training Methodology	80% of the program will be theory and 20% will be practical sessions, exercises, case studies, simulators or videos
Training Program	The training will be for 6 hours per day starting at 0800 and ending at 1400
H-STK Smart Training Kit	Not Applicable
Hands-on Practical Workshops	Not Applicable
Site Visit	Not Applicable
Simulators	Only software simulators will be used in the virtual courses. Hardware simulators are not applicable and will not be used in Virtual Training

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.

Learning Design & Customization

This course can be customized to the exact requirements of clients. Haward Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1: ***Monday, 13th of July 2026***

0800 – 0815	*Registration & Coffee*
0815 – 0830	*Welcome & Introduction*
0830 – 0845	***PRE-TEST***
0845 – 0930	***Introduction to Reservoir Characterization*** *Definition and Objectives of Reservoir Characterization • Static versus Dynamic Reservoir Models • Role in Field Development Planning • Importance in Asset Management*
0930 – 0945	*Break*
0945 - 1115	***Basics of Petroleum Geology*** *Reservoir Rock Types (Sandstone, Carbonate) • Porosity and Permeability Concepts • Structural and Stratigraphic Traps • Fluid Types and Distributions*
1115 – 1145	***Basics of Geophysics in Reservoir Engineering*** *Role of Geophysics in Subsurface Evaluation • Integration with Geology and Petrophysics • Types of Geophysical Methods • Applications in Reservoir Management*
1145 – 1200	***Seismic Survey Fundamentals*** *Types of Seismic Surveys (2D, 3D, 4D) • Seismic Acquisition Basics • Sources and Receivers • Data Quality Considerations*
1200 - 1215	*Break*
1215 - 1300	***Seismic Wave Propagation*** *Types of Seismic Waves (P-Wave, S-Wave) • Velocity and Travel Time Concepts • Reflection and Refraction Principles • Acoustic Impedance Fundamentals*
1300 - 1350	***Overview of Reservoir Properties*** *Porosity Types (Primary, Secondary) • Permeability and Flow Capacity • Fluid Saturation Concepts • Rock-Fluid Interactions*
1350 – 1400	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1400	*End of Day One*

Day 2: ***Tuesday, 14th of July 2026***

0800 - 0845	***Seismic Data Processing Basics*** *Data Acquisition to Final Seismic Section • Noise Removal Techniques • Migration Concepts • Resolution and Limitations*
0845 - 0930	***Seismic Interpretation Principles*** *Time versus Depth Interpretation • Picking Horizons • Identifying Reflectors • Seismic Facies Basics*
0930 - 0945	*Break*
0945 – 1100	***Structural Interpretation*** *Fault Identification • Fold Structures • Fault Sealing Concepts • Structural Mapping Techniques*

1100 – 1200	***Time-to-Depth Conversion*** *Velocity Models • Checkshot and VSP Data • Depth Conversion Workflows • Uncertainty Considerations*
1200 - 1215	*Break*
1215 - 1300	***Seismic Attributes Introduction*** *Amplitude Attributes • Frequency Attributes • Phase Attributes • Applications in Reservoir Detection*
1300 - 1350	***Mapping & Visualization*** *Contour Maps (Structure, Isochron) • Cross-Sections • 3D Visualization Tools • Interpretation Validati*
1350 – 1400	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1400	*End of Day Two*

Day 3: ***Wednesday, 15th of July 2026***

0800 - 0845	***Advanced Seismic Attributes*** *RMS Amplitude • Instantaneous Attributes • Coherence and Curvature • Attribute Extraction Workflows*
0845 - 0930	***Lithology & Fluid Prediction*** *Bright Spots and Flat Spots • Direct Hydrocarbon Indicators (DHIs) • AVO (Amplitude versus Offset) Basics • Limitations of Seismic Indicators*
0930 - 0945	*Break*
0945 – 1100	***Acoustic Impedance & Inversion*** *Definition of Acoustic Impedance • Post-Stack Inversion Basics • Pre-Stack Inversion Overview • Impedance Interpretation*
1100 – 1200	***Rock Physics Fundamentals*** *Relationship Between Rock Properties and Seismic Response • Elastic Properties (Vp, Vs, Density) • Fluid Substitution Concepts • Rock Physics Models*
1200 - 1215	*Break*
1215 - 1300	***Petrophysical Integration*** *Well Logs (Gamma Ray, Density, Neutron) • Log-Seismic Tie • Calibration of Seismic Data • Reservoir Property Estimation*
1300 - 1350	***Reservoir Heterogeneity*** *Types of Heterogeneity • Impact on Flow Behavior • Identification from Seismic Data • Upscaling Concepts*
1350 – 1400	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1400	*End of Day Three*

Day 4: Thursday, 16th of July 2026

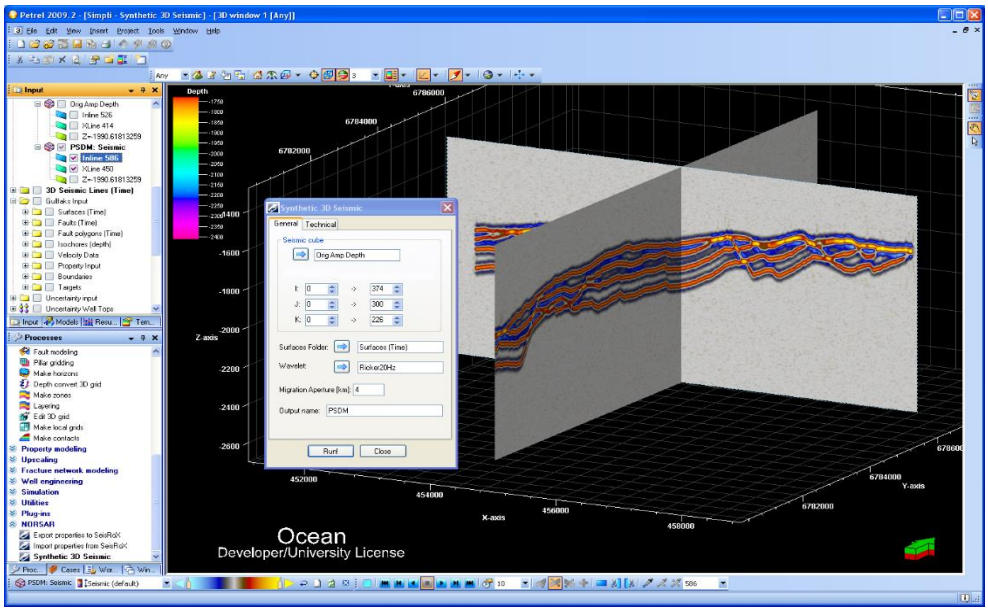
0800 - 0845	***Static Reservoir Modeling*** *Grid Construction • Structural Framework Building • Property Modeling Basics • Model Validation*
0845 - 0930	***Seismic Data Integration in Models*** *Seismic Constraints in Modeling • Property Distribution Using Seismic Attributes • Geostatistical Methods Overview • Uncertainty Handling*
0930 - 0945	*Break*
0945 – 1100	***Geostatistics Basics*** *Variograms and Spatial Continuity • Kriging Methods • Stochastic Simulation • Applications in Reservoir Modeling*
1100 – 1200	***Dynamic Reservoir Concepts*** *Reservoir Simulation Basics • Fluid Flow Principles • Pressure Behavior • Production Forecasting*
1200 - 1215	*Break*
1215 - 1300	***4D Seismic (Time-Lapse)*** *Concept and Objectives • Monitoring Reservoir Changes • Fluid Movement Detection • Case Examples*
1300 - 1350	***Uncertainty & Risk Analysis*** *Sources of Uncertainty • Sensitivity Analysis • Scenario-Based Modeling • Decision-Making Under Uncertainty*
1350 – 1400	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1400	*End of Day Four*

Day 5: Friday, 17th of July 2026

0800 - 0845	***Field Development Planning*** *Reservoir Characterization Inputs • Well Placement Optimization • Recovery Strategies • Integration with Surface Facilities*
0845 - 0930	***Reservoir Monitoring Techniques*** *Seismic Monitoring • Pressure and Production Data • Surveillance Strategies • Data Integration*
0930 - 0945	*Break*
0945 – 1100	***Carbonate Reservoir Challenges*** *Heterogeneity in Carbonates • Fractures and Vugs • Seismic Imaging Challenges • Characterization Approaches*
1100 – 1200	***Case Studies in Reservoir Characterization*** *Clastic Reservoir Examples • Carbonate Reservoir Examples • Lessons Learned • Best Practices*
1200 - 1215	*Break*
1215 – 1330	***Digital Transformation in Geophysics*** *Machine Learning Applications • Automated Seismic Interpretation • Big Data in Reservoir Characterization • Future Trends*
1330 – 1345	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
1345 – 1400	***POST-TEST***
1400	*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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