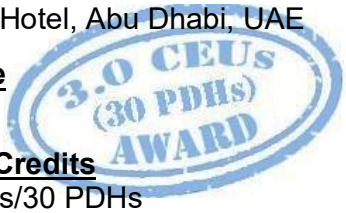
## COURSE OVERVIEW DE0287
# Tectono-Stratigraphy of Arabian Plate Boundaries & Basins

**Course Title**
Tectono-Stratigraphy of Arabian Plate Boundaries & Basins


**Course Date/Venue**
Session 1: July 27-31, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
Session 2: November 24-28, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE




**Course Reference**
DE0287

**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 Sedimentology & Sequence Stratigraphy. It covers the importance and relationship between sedimentology and stratigraphy; the main depositional environments and differentiating between various depositional settings; the alluvial facies models, characteristics and depositional processes; the concepts and methods of sedimentology and sequence stratigraphy analysis including the principles of facies and sequence analysis, tools and techniques; the fluvial facies models, characteristics and depositional processes; and the deltaic systems and characteristics of shallow marine facies models.

Further, the course will also discuss the log analysis and sequence boundaries, MFS and system tracts including wireline logs in stratigraphy; the seismic sequences, sequence boundaries and system tracts as well as interpreting seismic data and linking seismic and well data; the deep marine facies models, characteristics and depositional processes; and the seismic sequence stratigraphy at basin scale including seismic sequences, system tracts and methodology of interpretation.

During this interactive course, participant will learn the quantitative prediction of source rocks and reservoirs, predictive modeling techniques and application to seismic interpretation; the controls on reservoir distribution and predicting reservoir geometry; the identification, basics and importance of genetic sequences; the correlation by analysis of stacking patterns, techniques and methods and importance in reservoir prediction; the qualitative prediction of reservoir bodies extent and quality, its methods and techniques; the high-resolution interpretation exercise based on field studies; the integration of seismic and dynamic data and the importance in reservoir prediction; the 2D & 3D deterministic stratigraphic modeling, its concepts and tools; the quantitative prediction of reservoir distribution and connectivity including geostatistical modeling of inter-well heterogeneity; the different methods of stratigraphic modeling; and the geochemistry, biostratigraphy and lithostratigraphy as well as the importance in stratigraphic interpretation.

## Course Objectives

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

- Apply and gain a comprehensive knowledge on sedimentology and sequence stratigraphy
- Present concepts and methods of sedimentology and sequence stratigraphy analysis
- Carryout log analysis and identify sequence of boundaries, MFS and system tracts and integrate with seismic
- Analyze seismic sequences, identify sequence boundaries and system tracts
- Predict reservoir distribution and geometry
- Identify main depositional environments
- Discuss the importance and relationship between sedimentology and stratigraphy
- Determine the main depositional environments and differentiate between various depositional settings
- Identify the alluvial facies models, its characteristics and depositional processes
- Apply proper concepts and methods of sedimentology and sequence stratigraphy analysis including the principles of facies and sequence analysis, tools and techniques
- Identify the fluvial facies models, characteristics and depositional processes, deltaic systems and characteristics of shallow marine facies models
- Explain log analysis and sequence boundaries, MFS and system tracts including wireline logs in stratigraphy
- Identify seismic sequences, sequence boundaries and system tracts as well as interpret seismic data and link seismic and well data
- Recognize deep marine facies models including its characteristics and depositional processes
- Explain seismic sequence stratigraphy at basin scale including seismic sequences, system tracts and methodology of interpretation

- Examine quantitative prediction of source rocks and reservoirs and apply predictive modeling techniques and seismic interpretation
- Evaluate controls on reservoir distribution and predict reservoir geometry
- Identify and explain the basics and importance of genetic sequences
- Apply proper correlation by analysis of stacking patterns, techniques and methods and importance in reservoir prediction
- Determine the qualitative prediction of reservoir bodies extent and quality and apply proper methods and techniques
- Interpret high-resolution exercise based on field studies and integrate seismic and dynamic data as well as discuss the importance in reservoir prediction
- Describe 2D & 3D deterministic stratigraphic modeling including its concepts and tools
- Review quantitative prediction of reservoir distribution and connectivity as well as explain geostatistical modeling of inter-well heterogeneity
- Apply different methods of stratigraphic modeling as well as discuss the geochemistry, biostratigraphy and lithostratigraphy including the importance in stratigraphic interpretation

## 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 of sedimentology and sequence stratigraphy for reservoir engineers, managers, oil geologists who want. This course is geared toward geologists and managers who wish to understand the kinds of sedimentologic processes, and their control. A good knowledge of the processes generating sediments and rocks is a necessary step toward reconstitution of depositional environment, if intended. No significant experience is needed to attend the course.

## 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: -

- 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.

**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:*** ***Introduction to Sedimentology & Sequence Stratigraphy Concepts***

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| *0730 – 0800* | *Registration & Coffee* |
| *0800 – 0815* | *Welcome & Introduction* |
| *0815 – 0830* | ***PRE-TEST*** |
| *0830 – 0930* | ***Introduction to Sedimentology***<br>*Definition & Importance • Relationship Between Sedimentology & Stratigraphy* |
| *0930 – 0945* | *Break* |
| *0945 – 1030* | ***Main Depositional Environments***<br>*Introduction to Depositional Environments • Differentiating Between Various Depositional Settings* |
| *1030 – 1130* | ***Alluvial Facies Models***<br>*Characteristics & Depositional Processes • Case Study: Recognizing Alluvial Facies in Core & Outcrop* |
| *1130 – 1215* | ***Exercise:*** *Analyzing Alluvial Facies in Well Logs & Cores* |
| *1215 – 1230* | *Break* |
| *1230 – 1330* | ***Concepts & Methods of Sedimentology & Sequence Stratigraphy Analysis***<br>*Principles of Facies & Sequence Analysis • Tools & Techniques* |
| *1330 – 1420* | ***Exercise:*** *Sequence Stratigraphy Concepts & Terminology* |
| *1420 – 1430* | ***Recap*** |
| *1430* | *Lunch & End of Day One* |

***Day 2:*** ***Advanced Depositional Environments & Log Analysis***

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|---|---|
| *0730 – 0930* | ***Fluvial Facies Models***<br>*Characteristics & Depositional Processes • Case Study: Recognizing Fluvial Facies in Core & Outcrop* |
| *0930 – 0945* | *Break* |
| *0945 – 1030* | ***Exercise:*** *Analyzing Fluvial Facies in Well Logs & Cores* |
| *1030 – 1130* | ***Deltaic & Shallow Marine Facies Models***<br>*Deltaic Systems Overview • Characteristics of Shallow Marine Facies* |
| *1130 – 1215* | ***Log Analysis & Sequence Boundaries, MFS & System Tracts***<br>*Understanding Wireline Logs in Stratigraphy • Identifying Sequence Boundaries* |
| *1215 – 1230* | *Break* |
| *1230 – 1330* | ***Exercise:*** *Sequence Boundary Identification in Well Logs* |
| *1330 – 1420* | ***Seismic Sequences, Sequence Boundaries & System Tracts***<br>*Interpreting Seismic Data • Linking Seismic & Well Data* |
| *1420 – 1430* | ***Recap*** |
| *1430* | *Lunch & End of Day Two* |

***Day 3:*** ***Deep Marine Facies & Seismic Sequence Stratigraphy***

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|---|---|
| *0730 – 0930* | ***Deep Marine Facies Models***<br>*Characteristics & Depositional Processes • Case Studies from Outcrops & Fields* |
| *0930 – 0945* | *Break* |

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| 0945 – 1030 | ***Exercise:*** *Deep Marine Facies Interpretation in Seismic & Well Logs* |
| 1030 – 1130 | ***Seismic Sequence Stratigraphy at Basin Scale***<br>*Introduction to Seismic Sequences & System Tracts • Methodology of Interpretation* |
| 1130 – 1215 | ***Quantitative Prediction of Source Rocks & Reservoirs***<br>*Predictive Modeling Techniques • Application to Seismic Interpretation* |
| 1215 – 1230 | *Break* |
| 1230 – 1330 | ***Exercise:*** *Seismic Interpretation & Prediction Modeling* |
| 1330 – 1420 | ***Reservoir Distribution & Geometry***<br>*Controls on Reservoir Distribution • Predicting Reservoir Geometry* |
| 1420 – 1430 | ***Recap*** |
| 1430 | *Lunch & End of Day Three* |

***Day 4:*** ***High-resolution Sequence Stratigraphy at Reservoir Scale***

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| 0730 – 0930 | ***Identification of Genetic Sequences***<br>*Basics & Importance • Case Studies & Examples* |
| 0930 – 0945 | *Break* |
| 0945 – 1030 | ***Correlation by Analysis of Stacking Patterns***<br>*Techniques & Methods • Importance in Reservoir Prediction* |
| 1030 – 1130 | ***Qualitative Prediction of Reservoir Bodies Extent & Quality***<br>*Methods & Techniques • Case Study Analysis* |
| 1130 – 1215 | ***Exercise:*** *Interpretation Based on Outcrop Analogs* |
| 1215 – 1230 | *Break* |
| 1230 – 1330 | ***High-resolution Interpretation Exercise Based on Field Studies*** |
| 1330 – 1420 | ***Integration of Seismic & Dynamic Data***<br>*Importance in Reservoir Prediction • Methods & Case Studies* |
| 1420 – 1430 | ***Recap*** |
| 1430 | *Lunch & End of Day Four* |

***Day 5:*** ***Stratigraphy Modeling & Wrap-Up***

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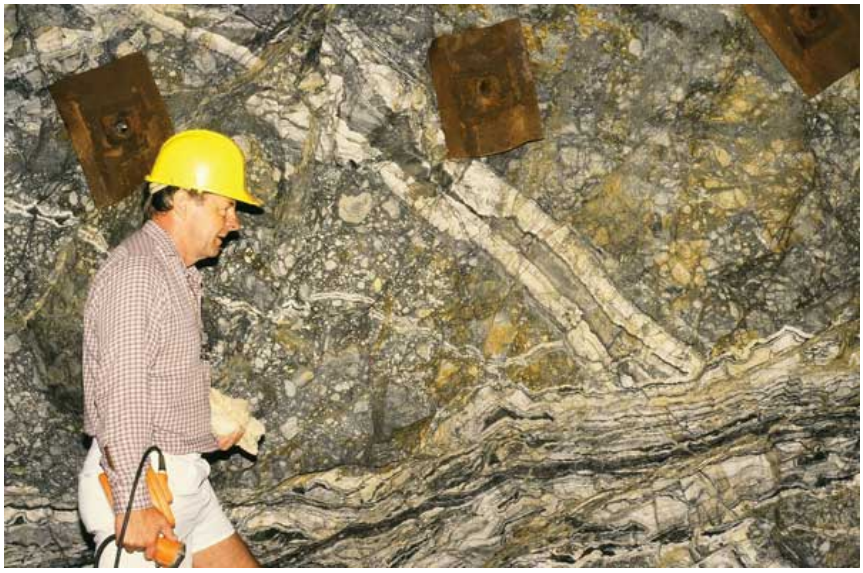
|---|---|
| 0730 – 0830 | ***2D & 3D Deterministic Stratigraphic Modeling***<br>*Concepts & Tools • Application & Case Studies* |
| 0830 – 0930 | ***Quantitative Prediction of Reservoir Distribution & Connectivity***<br>*Techniques & Case Studies • Geostatistical Modeling of Inter-well Heterogeneity* |
| 0930 – 0945 | *Break* |
| 0945 – 1030 | ***Different Methods of Stratigraphic Modeling***<br>*Object vs. Pixel Based • Overview of Dedicated Software Packages* |
| 1030 – 1130 | ***Geochemistry, Biostratigraphy & Lithostratigraphy***<br>*Importance in Stratigraphic Interpretation • Case Studies & Examples* |
| 1130 – 1215 | ***Exercise:*** *Full Field Interpretation using All Learned Techniques* |
| 1215 – 1230 | *Break* |
| 1230 – 1345 | ***Wrap-Up & Q&A Session***<br>*Review of Key Concepts • Open Discussion and Feedback* |
| 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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