



COURSE OVERVIEW DE0020 Carbonate Sequence Stratigraphy

Course Title

Carbonate Sequence Stratigraphy

Course Date/Venue

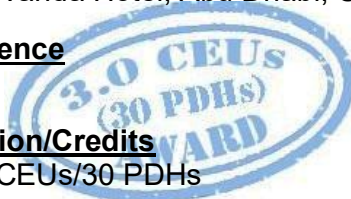
Session 1: February 23-27, 2025/Boardroom
1, Elite Byblos Hotel Al Barsha,
Sheikh Zayed Road, Dubai, UAE

Session 2: August 25-29, 2025/Fujairah
Meeting Room, Grand Millennium
Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

DE0020



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.

The overall objective of this course is to introduce E&P professionals to key concepts and principles of carbonate sequence stratigraphy and its application in petroleum exploration and production. Learning objectives are at basic awareness and knowledge levels. Emphasis is on practical understanding of carbonate facies analysis, controls on carbonate stratigraphic development, sequence stratigraphic architecture, recognition of sequence stratigraphic relationships in cores, logs, and seismic profiles, and application to carbonate reservoirs in a variety of tectonic and depositional settings.



This course is designed to teach the principles, concepts, and methods of sequence stratigraphy. Sequence stratigraphy is an informal chronostratigraphic methodology that uses stratal surfaces to subdivide the stratigraphic record. This methodology allows the identification of coeval facies, documents the time-transgressive nature of classic lithostratigraphic units, and provides geoscientists with an additional way to analyze and subdivide the stratigraphic record.



Course Objectives

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

- Apply and gain a good working knowledge on carbonate and clastic sequence stratigraphy
- Discuss the basic concepts of sequence stratigraphy that includes the sequence stratigraphic model, the role of depositional profile and its impact on sequence stratigraphic development and the basic elements of stratigraphic analysis
- Identify the basic controls on carbonate sediments including water depth, temperature, salinity, nutrients, oceanographic circulation and the effect of antecedent topography/bathymetry
- Determine carbonate platform profiles, sequence stratigraphy, carbonate sequence stratigraphy, carbonate seismic facies and sequence stratigraphic analysis
- Describe tectonic controls on carbonate sedimentation, platform evolution and sequence stratigraphy
- Interpret carbonate diagenesis within a sequence stratigraphic framework
- Recognize regimes, sequence stratigraphy and carbonate reservoirs

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 all significant aspects and considerations of carbonate and clastic sequence stratigraphy for geoscientists and reservoir engineers especially those who are working on carbonate reservoirs.

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:



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 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.



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 Sequence Stratigraphy: Basic Concepts What is Sequence Stratigraphy • Chronostratigraphy vs Lithostratigraphy • History of Sequence Stratigraphy: Foundations, Terminology, and Current Status • What is Accommodation (Space) and How is it Created • The Basic Sequence Stratigraphic Model
0930 – 0945	Break
0945 – 1115	Introduction to Sequence Stratigraphy: Basic Concepts (cont'd) Differences Between Siliciclastic and Carbonate Systems and Impact on Sequence Stratigraphic Interpretation • The Role of the Depositional Profile and Its Impact on Sequence Stratigraphic Development • Basic Elements of Sequence Stratigraphic Analysis: Key Surfaces, Stacking Patterns, and Stratal Geometries
1115 – 1215	Controls on Stratigraphic Development Eustatic Change: Mechanisms, Orders, and Rates of Change • Tectonic Subsidence: Drivers, Rates, and Histories • Compaction • Shallow-Marine Carbonate Sediment Production, Dispersal, and Accumulation
1215 – 1230	Break
1230 – 1330	Basic Controls on Carbonate Sedimentation Water Depth • Temperature: Tropical and “Cool-Water” Carbonate Sedimentation • Salinity • Nutrients • Oceanographic Circulation: Surface and Deep-Ocean Patterns • Secular Trends in Earth History • Effect of Antecedent Topography/Bathymetry
1330 - 1420	Exercises
1420 – 1430	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
1430	Lunch & End of Day One

Day 2

0730 – 0930	Carbonate Platform Profiles and Sequence Stratigraphy Platform Types: Ramps, Rimmed Shelves, and Isolated Platforms • Overview of Modern Carbonate-Platform Types • Ramp Models • Rimmed Shelf Models • Isolated Platform Models
0930 – 0945	Break
0945 – 1115	Carbonate Platform Profiles and Sequence Stratigraphy (cont'd) Exxon/Galloway Models • Effect of Platform Morphology on Sequence Stratigraphy • Role of Climate on Stratigraphic Development • Uses and Abuses of Sequence Stratigraphy
1115 – 1215	Carbonate Sequence Stratigraphy Hierarchy of Sequence Stratigraphic Units • Facies Expression of Parasequences: Inner-Platform to Deep-Water Settings • High-Resolution Sequence Stratigraphy • High-Frequency Sequences • Depositional Sequences • Super Sequences





1215 – 1230	Break
1230 – 1330	Carbonate Sequence Stratigraphy (cont'd) Principles of Stacking Pattern Analysis • Icehouse vs Greenhouse Stacking Patterns • Recognition of Sequence Boundaries in Cores, Outcrops, and Seismic Profiles
1330 - 1420	Exercises
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0930	Carbonate Seismic Facies and Sequence Stratigraphic Analysis Basics of Carbonate Seismic Facies and Caveats • Carbonate Seismic Facies Types
0930 – 0945	Break
0945 – 1115	Carbonate Seismic Facies and Sequence Stratigraphic Analysis (cont'd) Recognition of Stratal Relationships in Different Carbonate Facies
1115 – 1215	Tectonic Controls on Carbonate Sedimentation, Platform Evolution, & Sequence Stratigraphy How Does Tectonic Deformation Affect Carbonate Sedimentation • Scales of Tectonic Deformation
1215 – 1230	Break
1230 – 1330	Tectonic Controls on Carbonate Sedimentation, Platform Evolution, & Sequence Stratigraphy (cont'd) General Responses of Carbonate Systems to Tectonic Deformation • “Growth Stratigraphy”
1330 - 1420	Exercises
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4

0730 – 0930	Tectonic Controls on Carbonate Sedimentation, Platform Evolution, & Sequence Stratigraphy (cont'd) Carbonate Sedimentation in Rift Settings • Carbonate Sedimentation in Passive Margins
0930 – 0945	Break
0945 – 1115	Tectonic Controls on Carbonate Sedimentation, Platform Evolution, & Sequence Stratigraphy (cont'd) Carbonate Sedimentation in Flexural Basins • Carbonate Sedimentation in Strike-Slip Settings
1115 – 1215	Carbonate Diagenesis Within a Sequence Stratigraphic Framework Introduction to Carbonate Diagenesis: Mineralogies, Diagenetic Facies, and Rates of Diagenesis • Basic Hydrology of Carbonate Platforms: Near-Surface to Deep Burial to Uplift • Carbonate Pore Types and Genesis
1215 – 1230	Break
1230 – 1330	Carbonate Diagenesis Within a Sequence Stratigraphic Framework (cont'd) Marine Diagenesis • Meteoric Diagenesis • Deep-Burial Diagenesis • Dolomitization Models
1330 - 1420	Exercises
1420 – 1430	Recap
1430	Lunch & End of Day Four

Day 5

0730 – 0930	Regimes <i>Extensional Fault Regimes • Compressional Fault Regimes • Compactional Fault Regimes</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Sequence Stratigraphy and Carbonate Reservoirs <i>Workflow for Data Analysis • Core and Log Analysis • Seismic Analysis • Building the Geologic Model for Reservoir Simulation</i>
1100 – 1245	Overview and Summary <i>Where are We Going • What do We Need to Learn • General Questions</i>
1245 – 1300	<i>Break</i>
1300 – 1345	Exercises
1345 – 1400	Course Conclusion <i>Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course</i>
1400 – 1415	POST-TEST
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

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