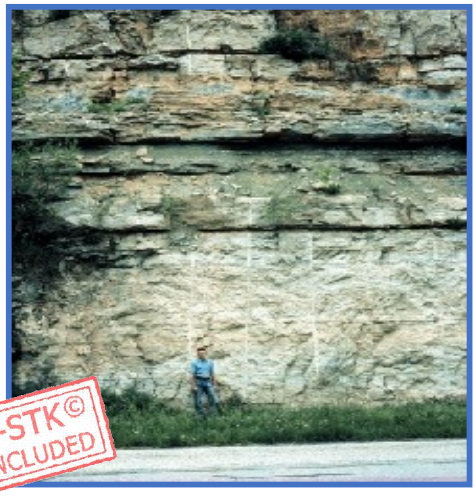
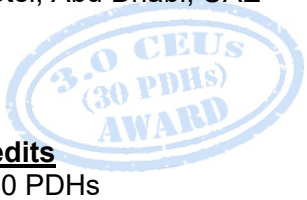
COURSE OVERVIEW DE0650
Sedimentology and Sedimentary Petrology

Course Title
Sedimentology and Sedimentary Petrology

Course Date/Venue
Session 1: July 20-24, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
Session 2: December 22-26, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

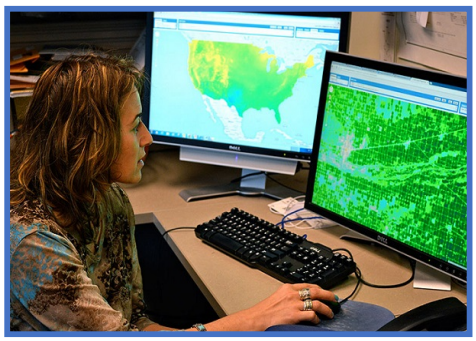


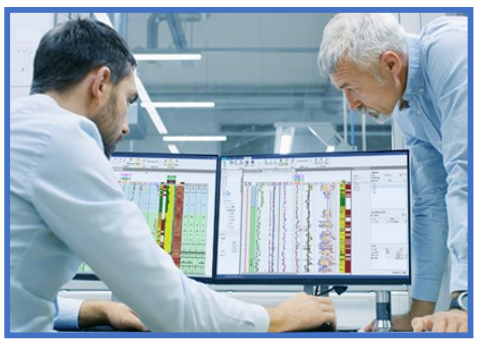
Course Reference
DE0650



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 main goal of the course is to offer the basic knowledge for to understand the petrography of the main types of sediments and sedimentary rocks; in this regard, the lectures will detail the most important families, with a special accent on siliciclastic and carbonate sediments and rocks, because of their importance esp. vs. their reservoir qualities in many parts of the world, and at many stratigraphic levels.

The course will expose the main criteria used in the classification, the compositional, textural and structural features, the petrographic types in the systems of classification currently in use, the alghorhythms to be used for a correct classification; the special focus is put on the specific petrogenetic conditions, as well as on possible diagenetic (postdepositional) paths of transformations that could affect the original fabrics; and problem of some hybrid (transitional) rocks will be detailed, and reliable criteria for their petrographic investigation and classification will be given too.

The lab works, aiming to give the attendees the necessary abilities for petrographic descriptions, classifications and interpretations, will support the lectures. The importance of a correct petrographic characterization in the case of reservoirs will be demonstrated finally.

Course Objectives

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

- Apply and a gain a good working knowledge on core description clastic and carbonates
- Discuss the importance of sediments and sedimentary rocks' petrography
- Explain the principles used in the classification of sediments and sedimentary rocks
- Use alghorithms for classification and identify the common types of siliciclastic sediments and rocks
- Describe texture, structures and criteria in systematics of siliciclastites
- Recognize the diagenesis, process and effects of siliciclastites
- Identify the criteria used in classification of siliciclastites including the importance of petrographic characterization of siliciclastites reservoirs
- Identify the common types of pyroclastic sediments and carbonate sediments
- Discuss evaporites, petrographic structure, diagnostic structures, specific diagenesis, petrogenesis and evaporitic models

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 core description clastic and carbonates for geoscientists and managers who wish to make themselves familiar with the petrology of the main families of sediments and sedimentary rocks, and with their systematics.

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 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 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:

Dr. John Petrus, PhD, MSc, BSc, is a **Senior Reservoir Engineer & Geologist** with over **30 years** of **onshore & offshore** experience within the **Oil & Gas**, **Refinery** and **Petroleum** industries. His wide experience covers in the areas of **Production Technology** & Engineering, **Well Completions**, **Well Logs**, **Well Stimulation** & **Production Logging**, **Well Completion** Design & Operation, Well Surveillance, **Well Testing**, **Well Stimulation** & Control and **Workover** Planning, **Completions & Workover**, Hole Cleaning & Logging, Servicing and **Work-Over** Operations, **Wellhead** Operations, Maintenance & Testing, Petrophysics/Interpretation of Well Composite, **Reservoir & Tubing** Performance, Practical **Reservoir** Engineering, Clastic **Exploration & Reservoir Sedimentology**, **Carbonate Reservoir Characterization** & Modeling, **Seismic Interpretation**, **Mapping & Reservoir** Modelling, **Reservoir Geology**, Integrating **Geoscience** into **Carbonate Reservoir** Management, **Faulted & Fractured Reservoirs**, **Fractured Hydrocarbon Reservoirs**, Analyses, Characterisation & Modelling of **Fractured Reservoirs & Prospects**, **Fracture Reservoir** Modeling Using **Petrel**, **Reservoir** Engineering Applied Research, **Artificial Lift**, **Artificial Lift System** Selection & Design, Electrical Submersible Pumps (**ESP**), Enhance Oil Recovery (**EOR**), **Hydraulic Fracturing**, **Sand Control** Techniques, **Perforating** Methods & Design, **Perforating** Operations, **Petroleum** Exploration & Production, **Hydrocarbon Exploration** & Production, Exploration & Production, **Play Assessment & Prospect Evaluation**, **Formation** Evaluation, **Petroleum Engineering** Practices, **Petroleum** Hydrogeology & Hydrodynamics, **Project** Uncertainty, Decision Analysis & Risk Management, **Decision Analysis & Uncertainty** Management, **Exploration & Development Geology**, **Sedimentology & Sequence Stratigraphy**, **Structural Interpretation** in Exploration & Development, **Petrel Geology**, **Geomodeling**, **Structural Geology**, **Applied Structural Geology** in Hydrocarbon Exploration, **Petrophysics**, **Geology** of the Oil & Gas Field, **Geophysics**, **Geothermal**, **Geochemical & Geo-Engineering** and Drilling Applied Research, Field Geological Outcrop Mapping & Digital Cartography, **Geological** Modelling, **Geoscience** Management in E&P, Geoscience Modelling, Geological Mapping, **Structural Geology-Tectonics**, **Structural** Analysis, **Tectonic Modelling** and Numerical Simulation of **Fractured Prospects & Reservoirs**, **Fracture Network** Analysis & Modelling, **Prospect** Generation, Global Networking, Research and Technology Development Management for **Fault & Fracture Analyses** & Modelling, **Fracture** Modelling, **Dynamic** Modelling, **Field Development** Planning, **Water Injection** Planning, Stereophotogrammetry, Fault Mapping, GPS Survey, 2D & 3D **Seismic Acquisition** & Processing, **3D Seismic** Surveys & Mapping, 3D GIS, GMAP, **Sandbox** Modelling, Sedimentological Logging, GR Logging, Surface & Subsurface 3D Modelling, Best Practices Management System (**BPMS**), Subsurface Work for Energy Projects, Digitalization Projects, **Structural Model** using **Petrel**, G&G Seismic & **Well Data** Modelling, **GIS System** Management, **Database** Management, Strategic Planning, Best Practices and Workflow, **Quality** Management, **Project** Management and **Risk Assessment** & Uncertainty Evaluation. Further, he is also well-versed in **seismic interpretation**, **mapping** & **reservoir modelling tools** like **Petrel** software, **LandMark**, **Seisworks**, **Geoframe**, **Zmap** and has extensive knowledge in MSDos, Unix, **AutoCAD**, MAP, Overlay, Quicksurf, 3DStudio, **Esri ArcGIS**, Visual Lisp, Fortran-77 and Clipper. Moreover, he is a world **expert** in **analysis** and **modelling** of **fractured prospects** and **reservoirs** and a **specialist** and **developer** of **fracture modelling software tools** such as FPDM, FMX and DMX Protocols.

During his career life, Dr. Petrus held significant positions and dedication as the **Executive Director**, **Senior Geoscience Advisor**, **Exploration Manager**, **Project Manager**, **Manager**, **Chief Geologist**, **Chief** of **Exploration**, **Chief** of **Geoscience**, **Senior Geosciences Engineer**, **Senior Explorationist**, **Senior Geologist**, **Geologist**, **Senior Geoscientist**, **Geomodeller**, **Geoscientist**, **CPR Editor**, **Resources Auditor**, **Project Leader**, **Technical Leader**, **Team Leader**, **Scientific Researcher** and **Senior Instructor/Trainer** from various international companies and universities such as the Dragon Oil Holding Plc., ENOC, MENA, ENI Group of Companies, Ocre Geoscience Services (OGS), Burren RPL, Ministry of Oil-Iraq, Eni Corporate University, Standford University, European Universities, European Research Institutes, NorskHydro Oil Company, Oil E&P Companies, just to name a few.

Dr. Petrus has a **PhD** in **Geology** and **Tectonophysics** and **Master's** and **Bachelor's** degree in **Earth Sciences** from the **Utrecht University**, **The Netherlands**. Further, he is a **Certified Instructor/Trainer**, a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management** (**ILM**), a Secretary and Treasurer of Board of Directors of Multicultural Centre, Association Steunfonds SSH/SSR and Founding Member of Sfera Association. He has further published several scientific publications, journals, research papers and books and delivered numerous trainings, workshops, courses, seminars and conferences internationally.

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 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	***Introductory Remarks*** *Objectives, Applied Importance of Sediments & Sedimentary Rocks" Petrography*
0930 – 0945	*Break*
0945 – 1100	***Sediments & Sedimentary Rocks*** *Particles vs. Minerals • Principles Used in the Classification of Sediments & Sedimentary Rocks • Alghorhythms for Classification*
1100 – 1215	***Sediments & Sedimentary Rocks (cont'd)*** *Criteria • Graphic Representations • Reliability*
1215 – 1230	*Break*
1230 – 1420	***Sediments & Sedimentary Rocks (cont'd)*** *Possible Confussions • The Problem of Hybrid Rocks*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Siliciclastic Sediments & Rocks*** *Common Types • Methods for Study • Composition: Particles vs. Liaison*
0930 – 0945	*Break*
0945 – 1100	***Siliciclastic Sediments & Rocks (cont'd)*** *Texture (Grain-size, Grain-shape) • Structures: Depositional/Post-Depositional, Internal/ Surficial, Constructional/ Erosional/ Deformational/ Geopetal • Criteria in Systematics of Siliciclastites*
1100 – 1215	***Siliciclastic Sediments & Rocks (cont'd)*** *Systematics of Siliciclastites • Sandstones vs. Graywackes • Conglomerates vs. Breccias*

1215 – 1230	*Break*
1230 – 1420	***Siliciclastic Sediments & Rocks (cont'd)*** *Petrogenesis • Diagenesis of Siliciclastites • Processes & Effects*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Applications*** *Criteria Used in Classification of Siliciclastities • Macro & Microscropic Study of Siliciclastities Sediments & Rocks • Importance of Petrographic Characterization of Siliclastic Reservoirs*
0930 – 0945	*Break*
0945 – 1100	***Applications (cont'd)*** *Macro-& Microscopic Study of Pyroclastic Sediments & Rocks • Specific Particles (Vitroclasts, Crystalloclasts, Lithoclasts) • Macroscopic Study of Diagnostic Physical Structures of Pyroclastites*
1100 – 1215	***Applications (cont'd)*** *Importance of Petrographic Characterization of Pyroclastic Products • The Special Position of Tuffs in the Stratigraphic Record • Macro & Microscopic Study of Carbonatic Sediments & Rocks*
1215 – 1230	*Break*
1230 – 1420	***Applications (cont'd)*** *Diagnostic Structures in Carbonate Rocks • Importance of Petrographic Characterization for Carbonate Reservoirs • Macro & Microscopic Study of Evaporites & other Sedimentary Rocks • Importance for Oil Systems*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0930	***Pyroclastic Sediments & Rocks*** *Common Types • Genetic Position: Primary vs. Secondary Processes in Volcanic Frame • Pyroclastic Particles: Criteria for Identification • Methods for Study • Criteria in Classification • Systematics • Grain-Size Types*
0930 – 0945	*Break*
0945 – 1100	***Pyroclastic Sediments & Rocks (cont'd)*** *Compositional Types • The Position of Tuffs within Pyroclastites • The Problem of Hybrid Rocks • The Case of Tuffites • Petrogenesis: Pyroclastic Processes (Flow, Surge, Fallout) • Criteria for Recognition • Specific Diagenesis*
1100 – 1215	***Carbonate Sediments & Rocks*** *Common Types • Criteria in Description • Methods for Study • Carbonate Particles: Alochems vs. Ortochems • Recognition & Environmental Significance • Specific Structures of Carbonate Sediments & Rocks • Chemical vs. Biotic Processes & Associated Affects • Specific Diagenesis*
1215 – 1230	*Break*
1230 – 1420	***Carbonate Sediments & Rocks (cont'd)*** *Authigenesis, Compaction, Pressure Solution, Recrystallization, Overgrowths, Types of Cementation, Metasomatism •Associated Effects (products) • Systematics of Carbonate Sediments & Rock • Criteria & Types • Equivalences • Limestones vs. Dolostones • Petrogenesis of Carbonatic Sediments & Rocks • Carbonate Facies vs. Depositional Environments*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day5

0730 – 0930	***Evaporites*** *What are Evaporites • Mineralogy vs. Geochemistry • Genetic Mysteries • Petrographic Structures*
0930 – 0945	*Break*
0945 – 1100	***Evaporites (cont'd)*** *Diagnostic Structures • Specific Diagenesis • Petrogenesis • Evaporitic Models*
1100 – 1215	***Other Sediments & Sedimentary Rocks*** *Case Studies: Mudstones; Ironstones; etc. • Systematics in Use vs. Criteria*
1215 – 1230	*Break*
1230 – 1345	***Other Sediments & Sedimentary Rocks (cont'd)*** *Common Types • Problems of Hybrid Petrotypes*
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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