COURSE OVERVIEW DE0335
Petrel Advanced Property Modeling

Course Title
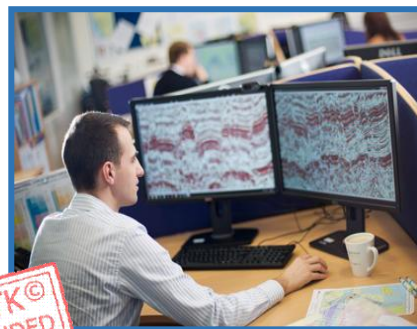Petrel Advanced Property Modeling

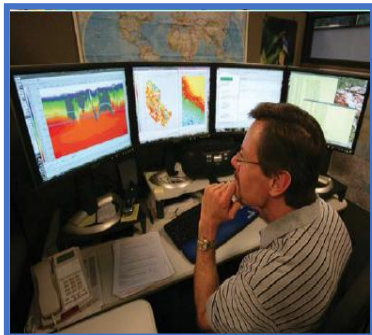**Course Reference**
DE0335

Course Date/Venue
Please refer to page number 5

**Course Duration/Credits**
Five days/3.0 CEUs/30 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 focus on Facies modeling, which in recent years has become the main method for guiding and constraining Petrophysical models. Pixel based and Object models are demonstrated and exhausted in addition to complex hierarchical models combining multiple methods. Standard facies modeling methods have their limitations in more complex depositional environments. Therefore, this course will explore the more advanced property modeling tools, like the cutting edge Multi-point statistics process.
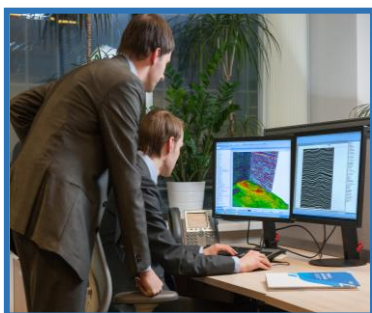
Different ways of creating soft probability data using different processes to analyze data, such as trend modeling and geometrical trend modeling, exploring the relationship of secondary data to constrain models will also be covered.

There is a special focus in the theory behind the Multi-point statistical concept, covering the creation of good training images and how to incorporate soft probability data, vary direction and scale in the final simulation model. In addition, this course covers the Geobody modeling tool for extracting seismic bodies and use them directly as "hard data" in the modeling process.
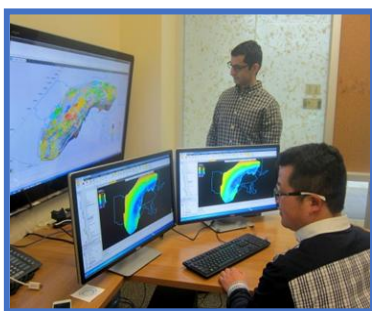
During this interactive course, participants will be able to learn the basics of geostatistics; the creation of soft data; the facies modeling methods with classical geostatistics; the pixel-based facies modeling methods and object-based facies modeling methods; the conditioning and combining of modeling methods; the neural net learning systems and multi-point statistics (MPS) theory; region properties; the conditioning and scaling of MPS models; the creation and use of seismic geobodies; and the multi-point facies simulation and conditioned petrophysical modeling.

Course Objectives

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

- Apply and gain an advanced knowledge on Petrel property modelling

- Discuss the basics of geostatistics and create soft probability data

- Apply facies modeling methods with classical geostatistics including pixel-based facies modeling methods and object-based facies modeling methods

- Condition and combine modeling methods

- Describe neural net learning systems and multi-point statistics (MPS) theory

- Identify region properties and carryout conditioning and scaling of MPS models

- Demonstrate how to make and use seismic geobodies

- Employ multi-point facies simulation and conditioned petrophysical modeling

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 covers systematic techniques on petrel advanced property modeling development and exploration geologists, geophysicists, petroleum engineers, reservoir engineers and other technical staff with experience in property modeling in Petrel.

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.

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

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 **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.

Haward Technology Middle East

Course Date/Venue

Session(s)	Date	Venue
1	May 04-08, 2026	Salon Expo, NH Hotel Plaza de Armas, Seville, Spain
2	June 21-25, 2026	Meeting Room 4, Four Seasons Hotel Cairo at Nile Plaza, Corniche El Nil, Garden City, Cairo, Egypt
3	July 05-09, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
4	August 09-13, 2026	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
5	October 19-23, 2026	Ruben Boardroom, The Rubens at The Palace, Buckingham Palace Road, London, United Kingdom
6	November 15-19, 2026	Pierre Lotti Meeting Room, Movenpick Hotel Istanbul Golden Horn, Istanbul, Turkey
7	December 06-10, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
8	January 03-07, 2027	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
9	March 14-18, 2027	Meeting Plus 9, City Centre Rotana, Doha, Qatar

Course Fee

Seville	**US$ 8,800** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Cairo	**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.
Doha	**US$ 8,500** per Delegate. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Dubai	**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.
London	**US$ 8,800** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

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	**Overview of Basic Geostatistics**
0930 – 0945	Break

0945 – 1045	*Creating Soft Probability Data*
1045 – 1230	*Creating Soft Probability Data (cont'd)*
1230 – 1245	*Break*
1245 – 1420	*Short Recap of Facies Modeling Methods with Classical Geostatistics*
1420 – 1430	*Recap*
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	*Pixel-Based Facies Modeling Methods*
0930 – 0945	*Break*
0945 – 1100	*Object-Based Facies Modeling Methods*
1100 – 1230	*Conditioning & Combining Modeling Methods*
1230 – 1245	*Break*
1245 – 1420	*Conditioning & Combining Modeling Methods (cont'd)*
1420 – 1430	*Recap*
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	*Neural Net Learning Systems*
0930 – 0945	*Break*
0945 – 1100	*Multi-Point Statistics (MPS) Theory*
1100 – 1230	*Region Properties*
1230 – 1245	*Break*
1245 – 1420	*Region Properties (cont'd)*
1420 – 1430	*Recap*
1430	*Lunch & End of Day Three*

Day 4

0730 – 0930	*Conditioning & Scaling of MPS Models*
0930 – 0945	*Break*
0945 – 1100	*Conditioning & Scaling of MPS Models (cont'd)*
1100 – 1230	*How to Make & Use Seismic Geobodies*
1230 – 1245	*Break*
1245 – 1420	*How to Make & Use Seismic Geobodies (cont'd)*
1420 – 1430	*Recap*
1430	*Lunch & End of Day Four*

Day 5

0730 – 0930	*Multi-Point Facies Simulation*
0930 – 0945	*Break*
0945 – 1100	*Multi-Point Facies Simulation (cont'd)*
1100 – 1230	*Optional: Conditioned Petrophysical Modeling*
1230 – 1245	*Break*
1245 – 1345	*Optional: Conditioned Petrophysical Modeling (cont'd)*
1345 – 1400	*Course Conclusion*
1400 - 1415	*POST-TEST*
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & 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 one of our state-of-the-art simulators "Petrel software".
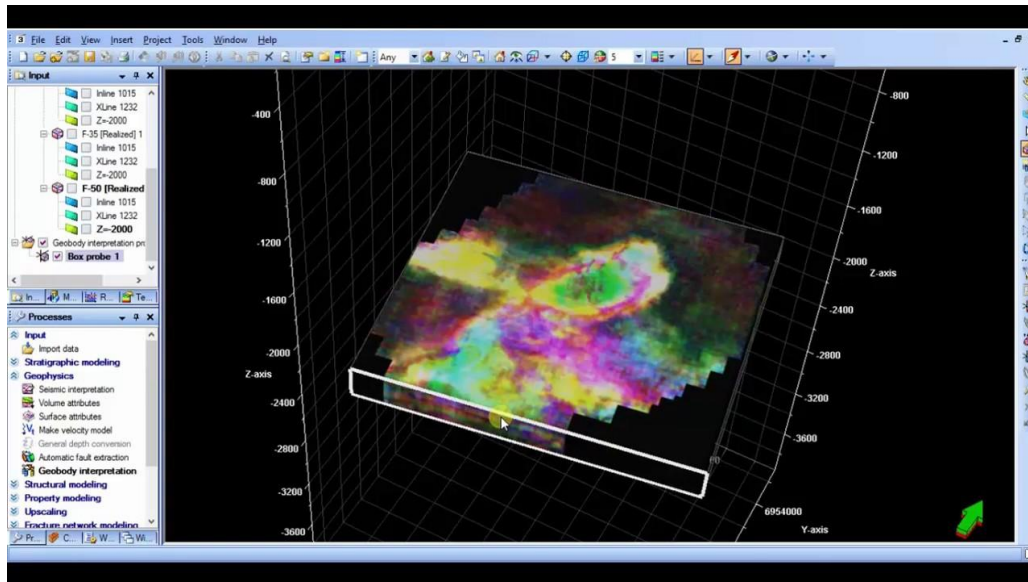
Petrel Software

Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org