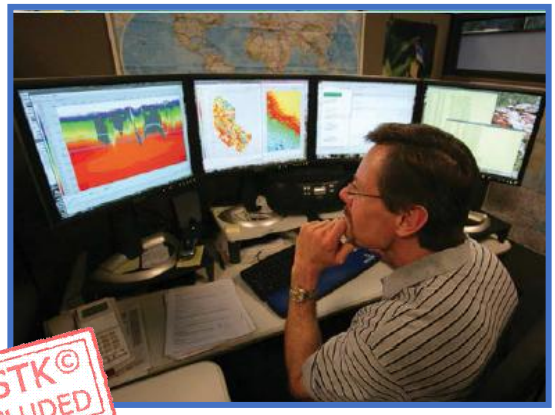
COURSE OVERVIEW DE0334
Petrel Property Modeling

Course Title
Petrel Property Modeling

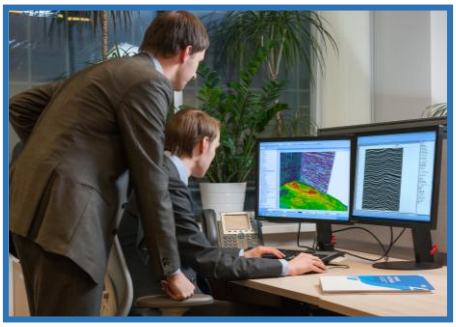
Course Date/Venue
Please see page 3

Course Reference
DE0334

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs



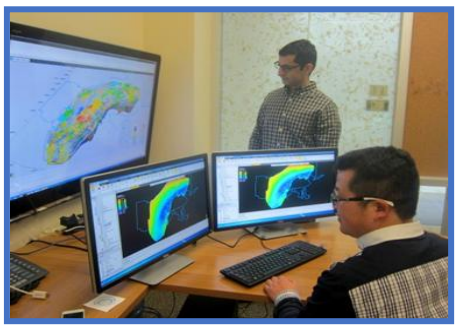
Course Description



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 is designed to provide participants with a detailed and up-to-date overview of Petrel Property Modeling. It covers the interface and key functionalities of petrel software; the basics of univariate and bivariate geostatistics; the techniques for editing well logs and calculations and corrections in well log data; the principles of upscaling well log data; the discrete and continuous data upscaling techniques; the tools available in petrel for geostatistical analysis and the methods for analysis facies data; the sequential indicator simulation (SIS), object facies modeling and truncated gaussian simulation (TGS) with trends; the secondary data into facies model; and the advanced techniques in facies modeling.

During this interactive course, participants will learn the quality control and validation of facies models; the petrophysical data, sequential gaussian simulation (SGS) and gaussian random function simulation (GRFS); the different types of kriging and their applications; the secondary data into petrophysical models; the quality of petrophysical models and validation methods and tools; the techniques for integrating facies and petrophysical models; the advanced applications and tools in petrel; the best practices and industry standards in property modeling; and the practical tips and techniques for effective modeling.



Course Objectives

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

- Apply and gain a comprehensive knowledge on petrel property modeling
- Identify the interface and key functionalities of petrel software and the basics of univariate and bivariate geostatistics
- Apply techniques for editing well logs as well as the calculations and corrections in well log data
- Explain the principles of upscaling well log data and apply discrete and continuous data upscaling techniques
- Recognize the tools available in petrel for geostatistical analysis and the methods for analysis facies data
- Describe sequential indicator simulation (SIS), object facies modeling and truncated gaussian simulation (TGS) with trends
- Integrate secondary data into facies model and apply advanced techniques in facies modeling
- Carryout quality control and validation of facies models, analyze petrophysical data and implement sequential gaussian simulation (SGS) in petrel
- Illustrate the process of implementing gaussian random function simulation (GRFS) in petrel and recognize the different types of kriging and their applications
- Integrate secondary data into petrophysical models, ensure the quality of petrophysical models and use validation methods and tools
- Apply techniques for integrating facies and petrophysical models and explore the advanced applications and tools in petrel
- Discuss the best practices and industry standards in property modeling including the practical tips and techniques for effective 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 property modeling for managers, development and exploration geologists, geophysics, geochemists, petrophysicists, petroleum engineers, reservoir engineers and technical personnel with prior experience in petrel.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Date/Venue

Session(s)	Date	Venue
1	June 01-05, 2026	Salon Expo, NH Hotel Plaza de Armas, Seville, Spain
2	June 28-July 02, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
3	August 30-September 03, 2026	Meeting Room 4, Four Seasons Hotel Cairo at Nile Plaza, Corniche El Nil, Garden City, Cairo, Egypt
4	September 13-17, 2026	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
5	November 29-December 03, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
6	January 11-15 2027	Ruben Boardroom, The Rubens at The Palace, Buckingham Palace Road, London, United Kingdom
8	March 21-25, 2027	Pierre Lotti Meeting Room, Movenpick Hotel Istanbul Golden Horn, Istanbul, Turkey

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

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

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.

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 Petrel Software Interface & Key Functionalities***
0930 – 0945	*Break*
0945 – 1030	***Basics of Uni & Bivariate Geostatistics*** *Understanding Statistical Concepts in Geostatistics • Introduction to Univariate & Bivariate Statistical Analysis • Practical Exercises on Basic Statistical Calculations*
1030 – 1130	***Data Preparation: Well Log Edits & Calculations*** *Techniques for Editing Well Logs • Calculations & Corrections in Well Log Data • Hands-On Session on Editing Well Log Data in Petrel*
1130 – 1215	***Data Preparation: Well Log Upscaling*** *Principles of Upscaling Well Log Data • Discrete & Continuous Data Upscaling Techniques • Practical Exercises on Well Log Upscaling*
1215 – 1230	*Break*
1230 – 1330	***Geostatistical Analysis Tools in Petrel*** *Overview of Tools Available in Petrel for Geostatistical Analysis • Practical Session on Using Basic Geostatistical Tools*
1330 – 1420	***Case Study & Practical Session*** *Applying the Concepts Learned to a Real Dataset • Group Discussion & Problem-Solving*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Facies Modeling: Introduction & Data Analysis*** *Understanding Facies & their Importance in Modeling • Methods for Analyzing Facies Data • Practical Exercises on Facies Data Analysis*
0830 – 0930	***Sequential Indicator Simulation (SIS)*** *Introduction to SIS Methodology • Step-By-Step Process of Implementing SIS in Petrel • Practical Session on SIS*
0930 – 0945	*Break*
0945 – 1100	***Object Facies Modeling: Concepts & Applications*** *Understanding Object-Based Facies Modeling • Techniques & Applications of Object Facies Modeling • Hands-On Session on Object Facies Modeling*
1100 – 1215	***Truncated Gaussian Simulation (TGS) with Trends*** *Introduction to TGS & Its Applications • Incorporating Trends in TGS • Practical Session on TGS with Trends*
1215 – 1230	*Break*
1230 – 1420	***Using Secondary Data in Facies Modeling*** *Types of Secondary Data & their Relevance • Techniques for Integrating Secondary Data into Facies Models • Practical Exercises on Using Secondary Data*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	***Advanced Facies Modeling Techniques*** *Exploration of Advanced Techniques in Facies Modeling • Practical Session on Advanced Facies Modeling*
0830 – 0930	***Quality Control & Validation of Facies Models*** *Techniques for Ensuring the Quality of Facies Models • Validation Methods & Tools • Practical Session on Quality Control & Validation*
0930 – 0945	*Break*
0945 – 1100	***Case Study: Facies Modeling Project*** *Working on a Comprehensive Facies Modeling Project • Group Work & Presentations*
1100 – 1215	***Petrophysical Modeling: Introduction & Data Analysis*** *Overview of Petrophysical Modeling • Methods for Analyzing Petrophysical Data • Hands-On Session on Petrophysical Data Analysis*
1215 – 1230	*Break*
1230 – 1420	***Sequential Gaussian Simulation (SGS)*** *Introduction to SGS Methodology • Implementing SGS in Petrel • Practical Exercises on SGS*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	***Gaussian Random Function Simulation (GRFS)*** *Introduction to GRFS & Its Applications • Step-By-Step Process of Implementing GRFS in Petrel • Practical Session on GRFS*
0830 – 0930	***Kriging: Concepts & Applications*** *Understanding Kriging & Its Importance • Different Types of Kriging & their Applications • Hands-On Session on Kriging*
0930 – 0945	*Break*
0945 – 1100	***Using Secondary Data in Petrophysical Models*** *Techniques for Integrating Secondary Data into Petrophysical Models • Practical Exercises on Using Secondary Data in Petrophysical Models*
1100 – 1215	***Quality Control & Validation of Petrophysical Models*** *Techniques for Ensuring the Quality of Petrophysical Models • Validation Methods & Tools • Practical Session on Quality Control & Validation*
1215 – 1230	*Break*
1230 – 1420	***Case Study: Petrophysical Modeling Project*** *Working on a Comprehensive Petrophysical Modeling Project • Group Work & Presentations*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

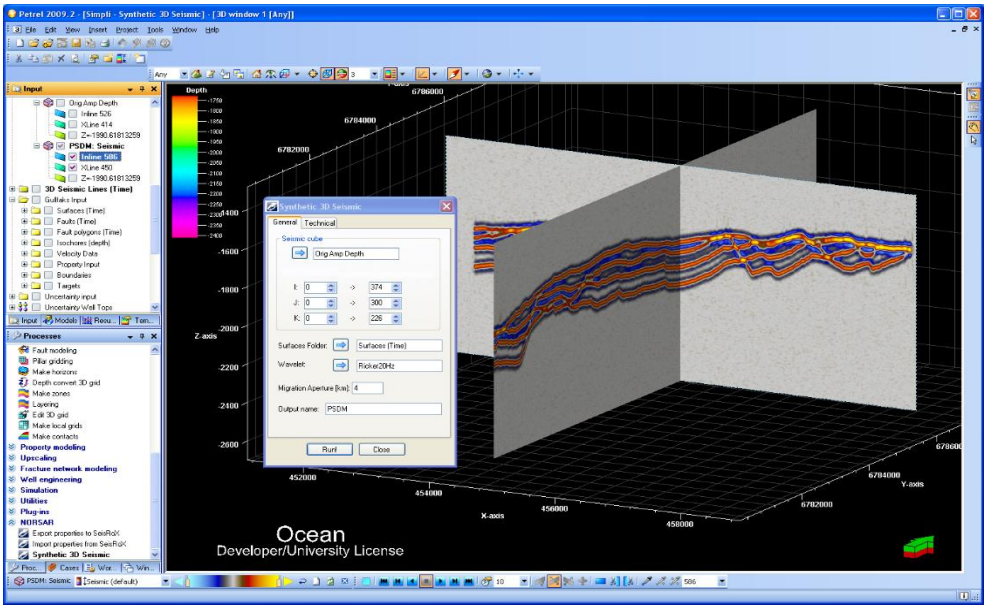
Day 5

0730 – 0930	***Integration of Facies & Petrophysical Models*** *Techniques for Integrating Facies & Petrophysical Models • Practical Exercises on Model Integration*
0930 – 0945	*Break*
0945 – 1100	***Advanced Applications in Petrel*** *Exploration of Advanced Applications & Tools in Petrel • Practical Session on Advanced Applications*

1100 – 1215	***Case Study: Comprehensive Modeling Project*** *Working on a Comprehensive Project Integrating All Learned Concepts • Group Work & Presentations*
1215 – 1230	*Break*
1230 – 1345	***Best Practices in Property Modeling*** *Discussion on Best Practices & Industry Standards • Practical Tips & Techniques for Effective Modeling*
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