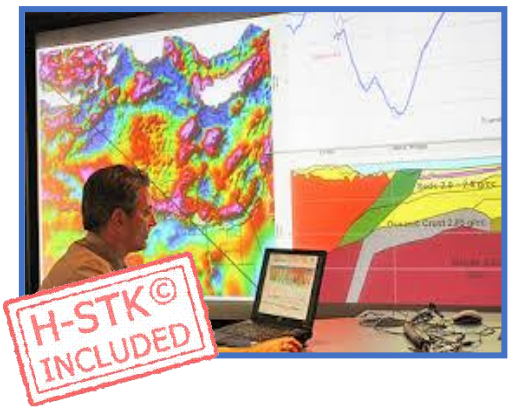
COURSE OVERVIEW DE1090
Petrel Static Modelling

Course Title
Petrel Static Modelling

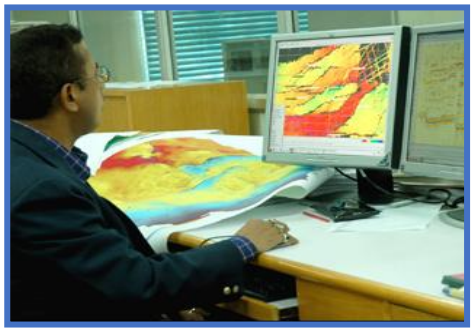
Course Date/Venue
August 18-22, 2025/Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



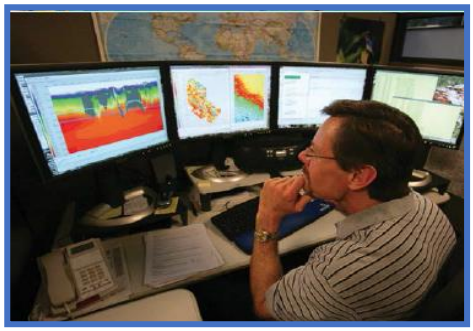
Course Reference
DE1090

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

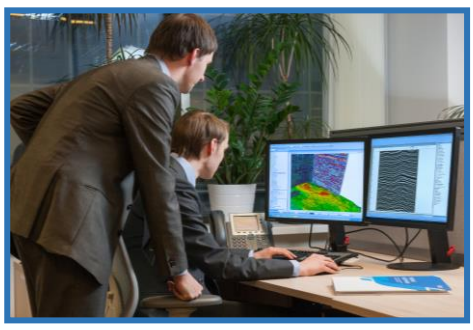
Course Description



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 Static Modelling. It covers the Petrel software environment, creating a new project and importing well data and seismic and map data; the well data management, seismic data handling and surface and fault interpretation basics; importing contour and structure maps, converting maps to surfaces, creating base maps for visualization and integrating GIS data; the fault modelling, horizon modelling, pillar gridding process and corner point gridding; and the structural framework building, zonation and layering.



Further, the course will also discuss the well correlation and interpretation, lithofacies modelling, petrophysical property modelling and saturation modelling; the trend and variogram analysis and quality control of property models; and the rock typing, property cutoffs, volume computation methods and volume sensitivity analysis.

During this interactive course, participants will learn the grid coarsening techniques, property upscaling workflows, exporting to simulation grids and QC of simulation-ready models; the uncertainty and sensitivity analysis, history matching preparation and model revisions and iterations; and preparing simulation input, upscaling properties and setting up grid compatibility.

Course Objectives

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

- Apply and gain an in-depth knowledge on Petrel static modelling
- Navigate Petrel software environment, create a new project and import well data and seismic and map data
- Carryout well data management, seismic data handling and surface and fault interpretation basics
- Import contour and structure maps, convert maps to surfaces, create base maps for visualization and integrate GIS data
- Illustrate fault modelling, horizon modelling, pillar gridding process, corner point gridding, structural framework building and zonation and layering
- Apply well correlation and interpretation, lithofacies modelling, petrophysical property modelling and saturation modelling
- Employ trend and variogram analysis and quality control of property models
- Identify rock typing and apply property cutoffs, volume computation methods and volume sensitivity analysis
- Employ grid coarsening techniques, property upscaling workflows, export to simulation grids and qc of simulation-ready models
- Apply uncertainty and sensitivity analysis, history matching preparation and model revisions and iterations
- Prepare simulation input, identify upscaling properties and set-up grid compatibility

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 Petrel static modelling for geologists, geophysicists, reservoir engineers, petrophysicists, subsurface data analysts, exploration and production (E&P) professionals, geoscience technicians and technical assistants, professionals involved in static reservoir modeling and field development planning and other technical staff.

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 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.

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 **Advanced Pressure-Volume-Temperature** (**PVT**), **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.

Accommodation

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

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: ***Monday, 18th of August 2025***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Overview of Petrel Software Environment*** *Interface Layout & Modules • Project Structure & Data Tree • Navigation Tools & Viewers • Understanding Workflows & Processes*
0930 - 0945	*Break*
0945 – 1045	***Project Initialization & Data Import*** *Creating a New Project • Coordinate Reference Systems • Importing Well Data (LAS Deviation Surveys) • Importing Seismic & Map Data*
1045 - 1145	***Well Data Management*** *Well Header & Trajectory Creation • Checking & Editing Deviation Surveys • Creating Logs & Cross-Sections • Quality Control of Well Data*
1145 - 1230	***Seismic Data Handling*** *Loading 2D/3D Seismic Volumes • Display & Interpretation Basics • Time-Depth Conversion Principles • Seismic Data QC*
1230 – 1245	*Break*
1245 – 1330	***Surface & Fault Interpretation Basics*** *Introduction to Interpretation Techniques • Creating & Editing Fault Sticks • Creating Horizons from Seismic • Fault Model QC & Refinement*
1330 - 1420	***Map & Grid Handling in Petrel*** *Importing Contour & Structure Maps • Converting Maps to Surfaces • Creating Base Maps for Visualization • Integrating GIS Data*
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:	Tuesday, 19th of August 2025
0730 – 0830	***Fault Modelling*** *Creating Fault Frameworks • Inputting Fault Sticks or Polygons • Fault Grouping & Hierarchy • Fault Model Consistency Checks*
0830 – 0930	***Horizon Modelling*** *Creating Interpreted Horizons • Snapping & Auto-Tracking Tools • Horizon Editing & Smoothing • Linking Horizons with Faults*
0930 - 0945	*Break*
0945 – 1130	***Pillar Gridding Process*** *Generating a Pillar Grid • Defining Grid Geometry & Extent • Fault & Horizon Intersection Handling • Grid QC & Refinement*
1130 - 1230	***Corner Point Gridding*** *Creating Corner Point Grids from Pillars • Fault Throw Handling • Grid Layering & Layering Control • Corner Point Grid Visualization*
1230 - 1245	*Break*
1245 - 1330	***Structural Framework Building*** *Combining Faults & Horizons • Ensuring Geological Consistency • Creating Stratigraphic Framework • Modifying Stratigraphic Surfaces*
1330 - 1420	***Zonation & Layering*** *Defining Zones & Layering Schemes • Thickness & Layering Rules • Creating Fine Layers for Property Modeling • QC & Visualization of Zones*
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 Two*

Day 3:	Wednesday, 20th of August 2025
0730 – 0830	***Well Correlation & Interpretation*** *Cross-Section Generation • Correlating Lithological Units • Picking Tops & Markers • Well Panel QC*
0830 – 0930	***Lithofacies Modelling*** *Defining Facies Codes & Interpretations • Facies Modeling Methods (Indicator Object) • Stochastic Facies Distribution • QC & Visualization of Facies*
0930 - 0945	*Break*
0945 – 1130	***Petrophysical Property Modelling*** *Importing Log Properties (Porosity Permeability) • Property Upscaling Techniques • Variogram Creation & Analysis • 3D Property Distribution (Kriging SGS)*
1130 - 1230	***Saturation Modelling*** *Importing Saturation Logs • Saturation Height Functions • Free Water Level & Contacts • Generating Saturation Models*
1230 - 1245	*Break*
1245 - 1330	***Trend & Variogram Analysis*** *Structural & Geological Trends • Variogram Setup & Modeling • Anisotropy & Spatial Correlation • Sensitivity & Uncertainty Review*

1330 - 1420	***Quality Control of Property Models*** *Cross-Plots & Histograms • Vertical Section Checks • Property Map Generation • Comparing with Well Data*
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 Three*

Day 4: ***Thursday, 21st of August 2025***

0730 – 0830	***Rock Typing & Cutoffs*** *Defining Rock Types • Applying Property Cutoffs • Creating Net-to-Gross Models • Rock Type QC*
0830 – 0930	***Volumetric Calculations*** *Defining Reservoir Zones • Volume Computation Methods (Deterministic/Probabilistic) • STOIIP/GIIP Estimation • Volume Sensitivity Analysis*
0930 - 0945	*Break*
0945 – 1130	***Upscaling for Simulation*** *Grid Coarsening Techniques • Property Upscaling Workflows • Export to Simulation Grids • QC of Simulation-Ready Models*
1130 - 1230	***Uncertainty & Sensitivity Analysis*** *Defining Uncertain Parameters • Running Multiple Realizations • P10/P50/P90 Models • Visualizing Uncertainty*
1230 - 1245	*Break*
1245 - 1330	***History Matching Preparation*** *Model Review for History Matching • Data Preparation for Dynamic Modelling • Exporting Static Model to Simulators • Integration with Eclipse CMG*
1330 - 1420	***Model Revisions & Iterations*** *Feedback from Dynamic Model • Updating Static Model Based on New Data • Structural Adjustments • Re-Modeling of Properties*
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 Four*

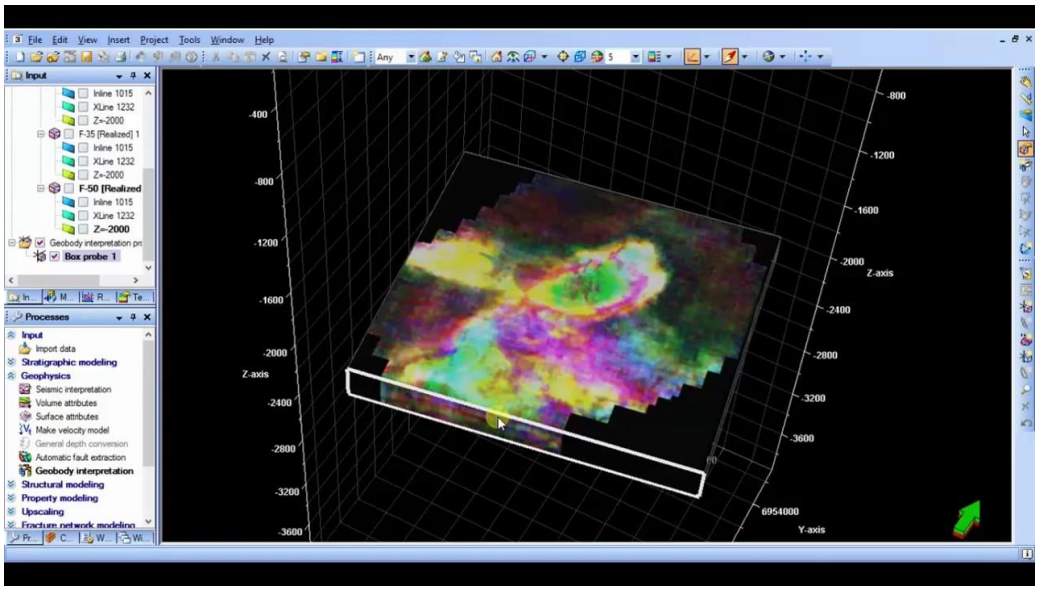
Day 5: ***Friday, 22nd of August 2025***

0730 – 0830	***Real Field Case Study: Structural Modelling*** *Geological Setting Overview • Importing & Interpreting Field Data • Fault & Horizon Framework Setup • Building the Structural Grid*
0830 – 0930	***Real Field Case Study: Property Modelling*** *Well Log Analysis • Defining Lithofacies & Properties • Generating Property Models • QC of Outputs Against Field Data*
0930 - 0945	*Break*
0945 – 1130	***Volumetric Estimation Case*** *Net Reservoir Porosity Saturation Calculation • Applying Cutoffs • Computing STOIIP/GIIP • Reporting Results*

1130 - 1230	***Static to Dynamic Model Integration*** *Preparing Simulation Input • Upscaling Properties • Setting Up Grid Compatibility • Export for Simulation*
1230 - 1245	*Break*
1245 – 1345	***Hands-On Group Exercise*** *Team-Based Modeling of a New Dataset • Division of Tasks (Structure Facies Properties) • Cross-Checks & Presentations • Peer Review & Discussion*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
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

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