



## COURSE OVERVIEW DE0334 Petrel Property Modeling

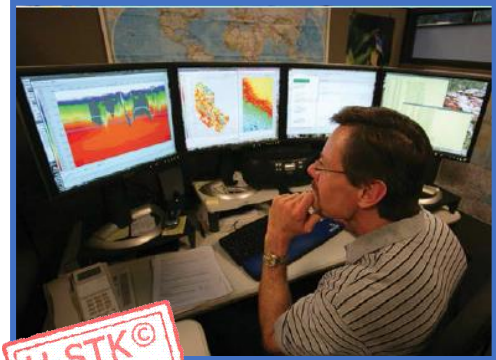
### Course Title

Petrel Property Modeling

### Course Date/Venue

Session 1: October 13-17, 2024/Oryx Meeting Room, Doubletree By Hilton Doha-Al Sadd, Doha, Qatar

Session 2: December 08-12, 2024/Oryx Meeting Room, Doubletree By Hilton Doha-Al Sadd, Doha, Qatar



### Course Reference

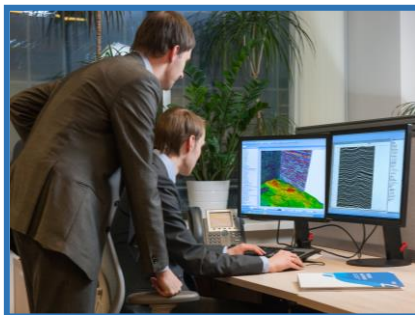
DE0334

### Course Duration/Credits

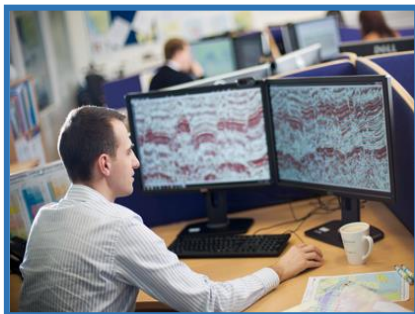
Five days/3.0 CEUs/30 PDHs



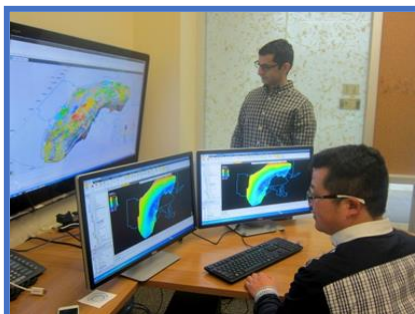
### Course Description



***This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.***



A property model is considered as the flesh or the content of the Geomodel. Property modelling consists in populating the Geomodel away from control points with reservoir properties derived from Well, seismic and analog data.



This course is designed to provide participants with a detailed and up-to-date overview of Petrel property modeling. It covers the basics of uni and bivariate geostatistics; the data preparation, well log edits and calculation; the upscaling for discrete and continuous data; the facies modeling, data analysis, sequential indicator simulation and object facies modeling; the truncated gaussian simulation with and without trends; the use of secondary data to populate facies models; the petrophysical modeling, petrophysical modeling data analysis, sequential gaussian simulation, gaussian random function simulation and kriging; and the use of secondary data to populate petrophysical models.



### 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
- Discuss the basics of uni and bivariate geostatistics
- Employ data preparation, well log edits and calculation including upscaling for discrete and continuous data
- Illustrate facies modeling, data analysis, sequential indicator simulation and object facies modeling
- Demonstrate truncated gaussian simulation with and without trends
- Use secondary data to populate facies models
- Illustrate petrophysical modeling, petrophysical modeling data analysis, sequential gaussian simulation, gaussian random function simulation and kriging
- Use secondary data to populate petrophysical 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 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.

### Course Fee

**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

### Accommodation

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

### 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: -

- 
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.

- 
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.



### 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. Hossam Kachwar** is a **Senior Mining Engineer** with over **20 years** of **Onshore & Offshore** experience within the **Oil & Gas, Refinery** and **Petrochemical** industries. His wide expertise covers in the areas of **Blasting Operations, Blast Resistance & Resilient** for Oil & Gas Field, **Seismicity Modelling, Borehole Charging, Borehole Seismic Acquisition, Processing & Operation, Data Management, Data Analysis Techniques, Data Analytics, Integration of Data, Analytical Techniques & Data Representation Methods, Basic Statistical Methods, Subsurface Mapping, Geostatistical Modeling Techniques, Formation Evaluation Measurement, Drilling Hazards & Drilling Bit Optimization, Geological & Hydrocarbon Evaluation, Gas Ratio Analysis & Interpretation, Reservoir Seismic Attributes, Analysis & Interpretation, Reservoir Characterization (Permeability & Porosity), Structural Geology, Fracture Prediction, Fault Seal Analysis, Mudlogging & Wireline Operations, Coring/Casing, Geological Report, Drilling Parameters Monitoring, Data Analysis, Geological Interpretation, Structural Geology, Subsurface Mapping, Geological & Hydrocarbon Evaluation, Geostatistical Modeling Techniques, 3D Geological Property Modelling, SHOTPlus and PETREL Software. Further, he is also well-versed in Petroleum Engineering, Reserve Estimation, Reserve Evaluation, Reservoir Characterization, Uncertainty Calculations, Risk & Uncertainties Management, Resources & Reserves Evaluation, Reserves Reporting, Oil & Gas Reserves Estimation, Unconventional Resource & Reserve, Reservoir Management, Reservoir Engineering, Fractured Carbonate Reservoir, Reservoir Geophysics, Reservoir Modelling, Steam Flood Reservoir Management, Integrated Carbonate Reservoir Characterization, Applied Reservoir Engineering & Management, Petroleum Reservoir Management, Reservoir Surveillance & Management, Applied Production Logging & Reservoir Monitoring, 3D Seismic Attributes for Reservoir Characterization, Reservoir Fluid Characterization & Management, Integrated Reservoir Analysis, Drilling Rigs, Jack-up Rig Operation, Drilling Process Evaluation, Rig Site Operation, Gas Formation Evaluation, Gas Ratio Analysis & Interpretation, Drilling Bit Optimization, Fracture Prediction, Fault Seal Analysis, Core & Coring Analysis, Well Data Results Interpretation, Rock Analysis, Rock Formation, Rock-cutting Data, Wireline Data & Core Sampling Analysis, H<sub>2</sub>S, Sea Survival, Helicopter under Water Emergency, Process Plant Shutdown, Turnaround & Troubleshooting, Process Equipment, Mechanical Integrity, Maintenance Management, Reliability Management, Reliability Best Practices, Maintenance Strategies, Rotating Equipment Failure Analysis, Reliability Optimization, Reliability Centered Maintenance (RCM), Risk & Reliability Engineering, Pump Technology, Pump Construction & Installation, Pump Performance and Mechanical Shaft Seals. Currently, he is the **Senior Operation & Modeler Geologist** wherein he is responsible in analyzing rocks from the oil and gas wells and involve in geostatistical modelling techniques as well as generating and using engineering geological models.**

During Mr. Hossam's career life, he has gained his thorough and practical experience through his various positions as the **Hydro Environmental Geologist, Reservoir & Modeler Geologist, Contractor Wellsite Geologist, Consultant Geologist, Mining Engineer, Data Engineer, Pressure Engineer, Mud Logger Geologist** and **Instructor/Trainer** for Petro-China, Petro-Canada, Suncor Energy Company, Baker Hugs, Geoservices and PetroServices, just to name a few.

Mr. Hossam has a **Bachelor's** degree in **Geology**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership of Management (ILM)** and has further delivered numerous trainings, seminars, conferences and workshops globally.



### **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	<b>PRE-TEST</b>
0830 – 0930	<b>Basics of Uni &amp; Bivariate Geostatistics</b>
0930 – 0945	Break
0945 – 1100	<b>Data Preparation, including Well Log Edits &amp; Calculations as well as Well Log Upscaling for Discrete &amp; Continuous Data</b>
1100 – 1215	<b>Facies Modeling</b>
1215 – 1230	Break
1230 – 1420	<b>Facies Modeling (cont'd)</b>
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day One

#### **Day 2**

0730 – 0930	<b>Data Analysis</b>
0930 – 0945	Break
0945 – 1100	<b>Sequential Indicator Simulation</b>
1100 – 1215	<b>Object Facies Modeling</b>
1215 – 1230	Break
1230 – 1420	<b>Object Facies Modeling (cont'd)</b>
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Two

#### **Day 3**

0730 – 0930	<b>Truncated Gaussian Simulation with &amp; without Trends</b>
0930 – 0945	Break
0945 – 1100	<b>Using Secondary Data to Populate Facies Models</b>
1100 – 1215	<b>Petrophysical Modeling Data Analysis</b>
1215 – 1230	Break
1230 – 1420	<b>Petrophysical Modeling Data Analysis (cont'd)</b>
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Three

#### **Day 4**

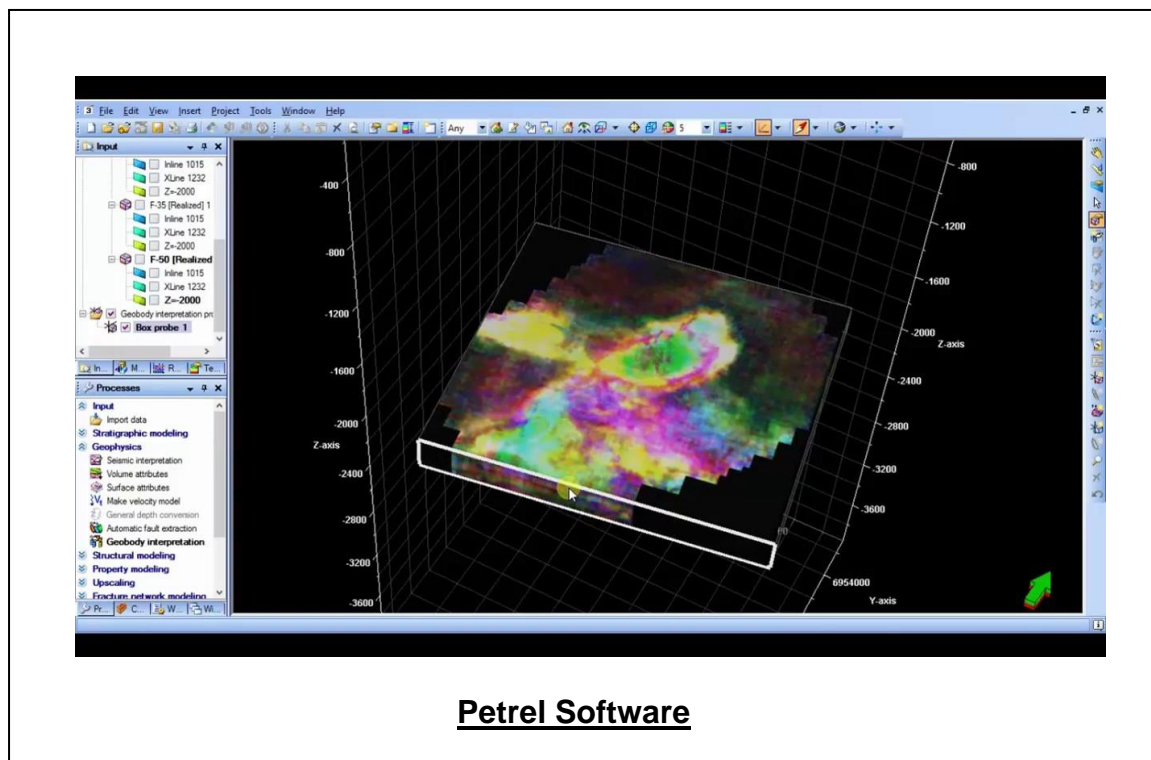
0730 – 0930	<b>Sequential Gaussian Simulation</b>
0930 – 0945	Break
0945 – 1100	<b>Sequential Gaussian Simulation (cont'd)</b>
1100 – 1215	<b>Gaussian Random Function Simulation</b>
1215 – 1230	Break
1230 – 1420	<b>Gaussian Random Function Simulation (cont'd)</b>
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Four

**Day 5**

0730 – 0930	<b>Kriging</b>
0930 – 0945	<i>Break</i>
0945 – 1100	<b>Kriging (cont'd)</b>
1100 – 1215	<b>Using Secondary Data to Populate Petrophysical Models</b>
1215 – 1230	<i>Break</i>
1230 – 1345	<b>Using Secondary Data to Populate Petrophysical Models (cont'd)</b>
1345 – 1400	<b>Course Conclusion</b>
1400 – 1415	<b>POST-TEST</b>
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch &amp; End of Course</i>

**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”.



**Course Coordinator**

Jaryl Castillo, Tel: +974 4423 1327, Email: [jaryl@haward.org](mailto:jaryl@haward.org)