Haward Technology Middle East

COURSE OVERVIEW DE0271
Petrel Uncertainty & Optimization

Course Title
Petrel Uncertainty & Optimization

Course Date/Venue
Please see page 3

Course Reference
DE0271

3.0 CEUs (30 PDHs) AWARD
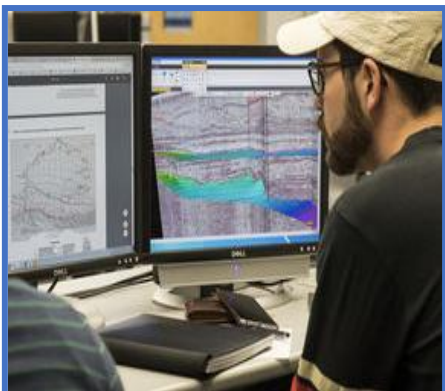
H-STK© INCLUDED

**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 Uncertainty and Optimization. It covers the capabilities and applications of Petrel software for uncertainty management; the concepts of uncertainty in reservoir modeling; data importing at management for uncertainty analysis; the fundamental concepts and tools of geostatistics and probabilistic modeling; the basic uncertainty study in Petrel and effective ways to visualize uncertain data; the advanced geostatistical methods in Petrel, parametrization of uncertainty monte carlo simulations and handling spatial uncertainty; the uncertainty in porosity, permeability and saturation; and the perform dynamic data integration for uncertainty analysis.
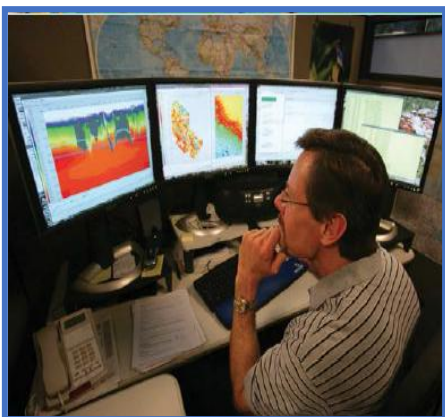
During this interactive course, participants will learn the systematic techniques and best practices in calibrating static models with dynamic data; the sensitivity analysis and scenario evaluation, workflow optimization for history matching and reservoir optimization; the geomodels to reservoir simulation for optimization; the optimization algorithms in Petrel; the field development planning under uncertainty, economic aspects and optimization and advanced uncertainty analysis methods; the workflows for uncertainty and optimization; the risk management and decision making under uncertainty; the emerging technologies and future developments in Petrel; and the implement best practices for reporting and presentation of results.

Course Objectives

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

- Apply and gain an in-depth knowledge on Petrel Uncertainty and Optimization

- Explain the capabilities and applications of Petrel software for uncertainty management

- Discuss the concepts of uncertainty in reservoir modeling and apply data import at management for uncertainty analysis

- Explain the fundamental concepts and tools of geostatistics and probabilistic modeling

- Setup basic uncertainty study in Petrel and apply effective ways to visualize uncertain data

- Carryout advanced geostatistical methods in Petrel, parametrization of uncertainty, monte carlo simulations and handling spatial uncertainty

- Manage uncertainty in porosity, permeability and saturation as well as perform dynamic data integration for uncertainty analysis

- Utilize Petrel for efficient history matching and apply systematic techniques and best practices in calibrating static models with dynamic data

- Employ sensitivity analysis and scenario evaluation, workflow optimization for history matching and reservoir optimization

- Link geomodels for reservoir simulation for optimization and illustrate optimization algorithms in Petrel

- Apply field development planning under uncertainty, economic aspects and optimization and advanced uncertainty analysis methods

- Customize workflows for uncertainty and optimization and apply risk management and decision making under uncertainty

- Discuss the emerging technologies and future developments in Petrel and implement best practices for reporting and presentation of results

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 uncertainty and optimization for geologists, geophysicists, petrophysicists, reservoir engineers, production engineers, drilling engineers and technical support staff who work with geoscientists and engineers.

Course Date/Venue

Session(s)	Date	Venue
1	April 26-30, 2026	Pierre Lotti Meeting Room, Movenpick Hotel Istanbul Golden Horn, Istanbul, Turkey
2	May 31-June 04, 2026	Meeting Room 4, Four Seasons Hotel Cairo at Nile Plaza, Corniche El Nil, Garden City, Cairo, Egypt
3	July 26-30, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
4	September 06-10, 2026	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
5	November 02-06, 2026	Ruben Boardroom, The Rubens at The Palace, Buckingham Palace Road, London, United Kingdom
6	December 14-18, 2026	Salon Expo, NH Hotel Plaza de Armas, Seville, Spain
7	December 27-31, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
8	January 24-28, 2027	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
9	February 22-26, 2027	Ruben Boardroom, The Rubens at The Palace, Buckingham Palace Road, London, United Kingdom
10	March 21-25, 2027	Pierre Lotti Meeting Room, Movenpick Hotel Istanbul Golden Horn, Istanbul, Turkey

Course Fee

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.
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.
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.
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.

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.

Accommodation

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

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. Konstantin Zorbalas, MSc, BSc, is a **Senior Petroleum Engineer & Well Completions Specialist** with over **25 years** of **offshore** and **onshore** experience in the **Oil** & **Gas**, **Refinery** & **Petrochemical** industries. His wide expertise includes **Workovers & Completions**, **Petroleum Risk & Decision Analysis**, **Acidizing Application** in **Sandstone** & **Carbonate**, **Well Testing Analysis**, **Stimulation Operations**, **Reserves Evaluation**, **Reservoir Fluid Properties**, **Reservoir Engineering & Simulation Studies**, **Reservoir Monitoring**, **Artificial Lift Design**, **Gas Operations**, **Workover/Remedial Operations** & **Heavy Oil Technology**, **Applied Water Technology**, **Oil & Gas Production**, **X-mas Tree** & **Wellhead Operations** & **Testing**, **Artificial Lift Systems** (**Gas Lift**, **ESP**, and **Rod Pumping**), **Well Cementing**, **Production Optimization**, **Well Completion Design**, **Sand Control**, **PLT Correlation**, **Slickline Operations**, **Acid Stimulation**, **Well testing**, **Production Logging**, **Project Evaluation** & **Economic Analysis**. Further, he is actively involved in **Project Management** with special emphasis in production technology and field optimization, performing conceptual studies, economic analysis with risk assessment and field development planning. He is currently the **Senior Petroleum Engineer & Consultant** of **National Oil Company** wherein he is involved in the mega-mature fields in the Arabian Gulf, predominantly carbonate reservoirs; designing the acid stimulation treatments with post-drilling rigless operations; utilizing CT with tractors and DTS systems; and he is responsible for gas production and preparing for reservoir engineering and simulation studies, well testing activities, field and reservoir monitoring, production logging and optimization and well completion design.

During his career life, Mr. Zorbalas worked as a **Senior Production Engineer**, **Well Completion Specialist**, **Production Manager**, **Project Manager**, **Technical Manager**, **Technical Supervisor** & **Contracts Manager**, **Production Engineer**, **Production Supervisor**, **Production Technologist**, **Technical Specialist**, **Business Development Analyst**, **Field Production Engineer** and **Field Engineer**. He worked for many **world-class oil/gas companies** such as **ZADCO**, **ADMA-OPCO**, **Oilfield International Ltd**, **Burlington Resources** (later acquired by **Conoco Phillips**), **MOBIL E&P**, **Saudi Aramco**, **Pluspetrol E&P SA**, **Wintershall**, **Taylor Energy**, **Schlumberger**, **Rowan Drilling** and **Yukos EP** where he was in-charge of the **design and technical analysis** of a gas plant with capacity **1.8 billion m3/yr gas**. His achievements include **boosting oil production 17.2% per year** since 1999 using **ESP** and **Gas Lift systems**.

Mr. Zorbalas has **Master** and **Bachelor** degrees in **Petroleum Engineering** from the **Mississippi State University**, **USA**. Further, he is an **SPE Certified Petroleum Engineer**, **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**), an active member of the Society of Petroleum Engineers (**SPE**) and has numerous scientific and technical publications and delivered innumerable training courses, seminars and workshops worldwide.

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 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 – 0900	**Overview of Petrel Software for Uncertainty Management**: *Capabilities & Applications*
0900 - 0930	**Concepts of Uncertainty in Reservoir Modeling**: *Different Types of Uncertainty*
0930 – 0945	*Break*
0945 – 1130	**Data Import & Management for Uncertainty Analysis**: *Best Practices in Managing Data*
1130 – 1230	**Geostatistics & Probabilistic Modeling**: *Fundamental Concepts & Tools*
1230 – 1245	*Break*
1245 - 1300	**Setting Up a Basic Uncertainty Study in Petrel**: *Step-By-Step Guide to Initiating an Uncertainty Analysis*
1300 - 1420	**Visualization Techniques for Uncertainty**: *Effective Ways to Visualize Uncertain Data*
1420 – 1430	**Recap**
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	**Advanced Geostatistical Methods in Petrel**: *Kriging, Co-Kriging & Stochastic Modeling*
0830 - 0930	**Parameterization of Uncertainty**: *Defining & Managing Input Parameters*
0930 – 0945	*Break*
0945 – 1130	**Monte Carlo Simulations in Petrel**: *Setting Up & Running Monte Carlo Simulations*
1300 – 1230	**Handling Spatial Uncertainty**: *Techniques for Modeling Spatial Variability*
1230 – 1245	*Break*
1245 - 1300	**Uncertainty In Petrophysical Properties**: *Managing Uncertainty in Porosity, Permeability & Saturation*
1300 - 1420	**Practical Exercise**: *Creating a Geostatistical Model with Uncertainty Parameters*
1420 – 1430	**Recap**
1430	*Lunch & End of Day Two*

Day 3

| 0730 – 0830	**Dynamic Data Integration for Uncertainty Analysis**: *Incorporating Production & Well Test Data*
0830 - 0930	**Automated History Matching Tools in Petrel**: *Utilizing Petrel for Efficient History Matching*
0930 – 0945	*Break*
0945 – 1130	**Calibrating Static Models with Dynamic Data**: *Techniques & Best Practices*
11:30 – 1230	**Sensitivity Analysis & Scenario Evaluation**: *The Impact of Different Parameters*
1230 – 1245	**Break**
1245 - 1300	**Workflow Optimization for History Matching**: *Streamlining the History Matching Process*
1300 - 1420	**Group Activity:** *Performing History Matching on a Model with Uncertain Parameters*
1420 – 1430	**Recap**
1430	*Lunch & End of Day Three*

Day 4

0730 – 0830	**Overview of Reservoir Optimization**: *Goals & Methodologies*
0830 - 0930	**Linking Geomodels to Reservoir Simulation for Optimization**: *Techniques for Integration*
0930 – 0945	*Break*
0945 – 1130	**Optimization Algorithms in Petrel**: *Exploring Available Tools & Methods*
1300 – 1230	**Field Development Planning Under Uncertainty**: *Strategies for Optimizing Well Placement & Production*
1230 – 1245	*Break*
1245 - 1300	**Economic Aspects of Optimization**: *Considering Cost Factors in Decision-Making*
1300 - 1420	**Case Study Review**: *Analysis of an Optimization Project Using Petrel*
1420 – 1430	**Recap**
1430	*Lunch & End of Day Four*

Day 5

0730 – 0830	**Advanced Uncertainty Analysis Methods**: *Exploring Cutting-Edge Techniques*
0830 - 0930	**Customizing Workflows for Uncertainty & Optimization**: *Tailoring Petrel Workflows to Specific Needs*
0930 – 0945	*Break*
0945 – 1130	**Risk Management & Decision Making Under Uncertainty**: *Approaches for Handling Risk*
1130 – 1230	**Emerging Technologies & Future Developments in Petrel**: *Keeping Up-to-Date with Software Advancements*
1230 – 1245	*Break*
1245 – 1345	**Best Practices for Reporting & Presentation of Results**: *Effective Communication of Uncertainty & Optimization Studies*
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 the "Petrel" software.
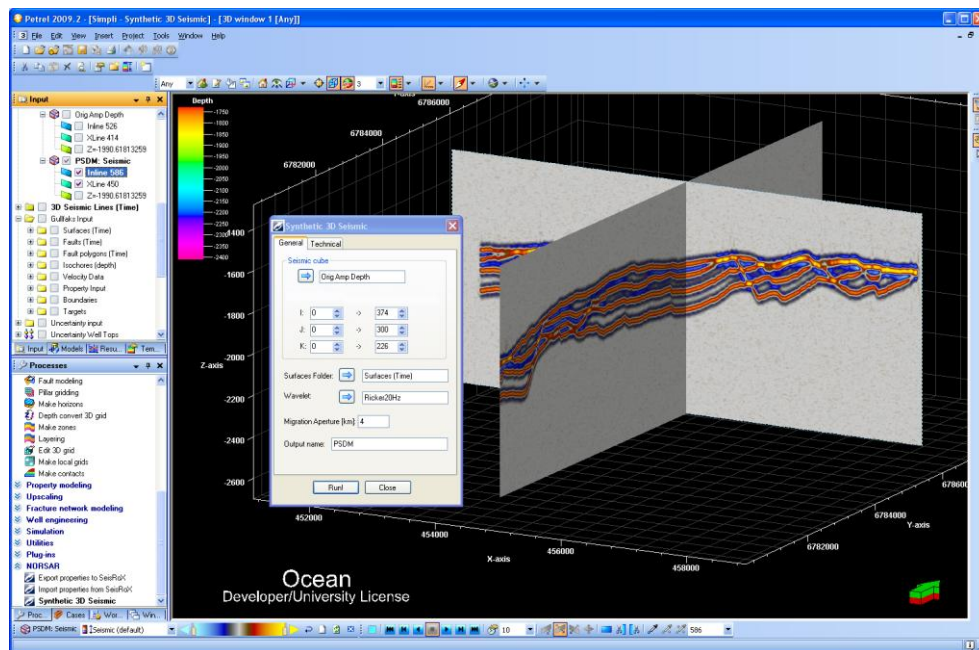
Petrel Software

Course Coordinator

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