Haward Technology Middle East

COURSE OVERVIEW DE0385
Petrel Mapping & Geological Workflow

Course Title
Petrel Mapping & Geological Workflow

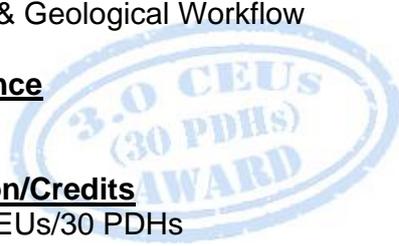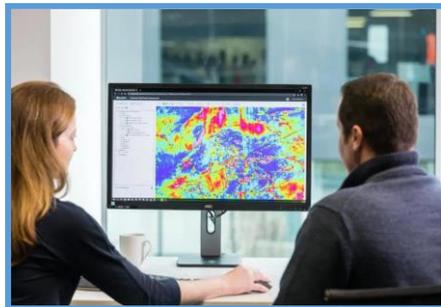**Course Reference**
DE0385

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

Course Date/Venue

Session(s)	Date	Venue
1	March 03-07, 2024	Oryx Meeting Room, DoubleTree By Hilton Doha-Al Sadd, Doha, Qatar
2	May 19-23, 2024	
3	September 22-26, 2024	
4	November 10-14, 2024	

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 Mapping & Geological Workflow. It covers the capabilities of Petrel software in geological modeling and navigating Petrel interface; importing geological data and creating simple geological maps and effective ways to visualize geological data; the base maps and grids for geological mapping and systematic techniques for creating contour and surface maps; and the fault modeling and representation and the three-dimensional geological models.
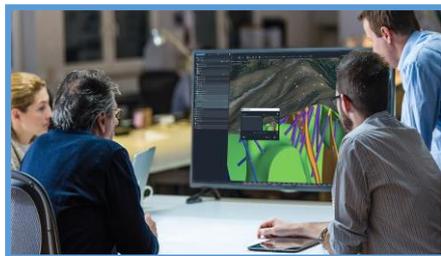
During this interactive course, participants will learn the integration of seismic data with geological maps; the volume calculations and resource estimations using Petrel; the basics of petrophysical analysis and techniques for analyzing well logs; the methods for modeling properties like porosity and permeability and utilizing crossplots for data interpretation; incorporating core analysis data into geological models and the basics of workflow development in Petrel; creating automated workflows for geological tasks and customizing workflows for specific projects; the best practices for efficient workflow development and scripting for advanced workflow automation; integrating geological models with reservoir simulation; the quality control and validation of geological models; the impactful reports and presentations of geological models; and the best practices in geological modelling and mapping.

Course Objectives

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

- Apply and gain an in-depth knowledge on Petrel mapping and geological workflow

- Discuss the capabilities of Petrel software in geological modeling and navigate the Petrel interface

- Import geological data and create simple geological maps and effective ways to visualize geological data

- Create base maps and grids for geological mapping and apply systematic techniques for creating contour and surface maps

- Illustrate fault modeling and representation and three-dimensional geological models

- Integrate seismic data with geological maps and carryout volume calculations and resource estimations using Petrel

- Recognize the basics of petrophysical analysis and discuss the techniques for analyzing well logs

- Implement methods for modeling properties like porosity and permeability and utilize crossplots for data interpretation

- Incorporate core analysis data into geological models and discuss the basics of workflow development in Petrel

- Create automated workflows for geological tasks and customize workflows for specific projects

- Carryout best practices for efficient workflow development and scripting for advanced workflow automation

- Integrate geological models with reservoir simulation and quality control and validation of geological models

- Create impactful reports and presentations of geological models and best practices in geological modelling and mapping

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 mapping and geological workflow for geologists, geophysicists, reservoir engineers, petroleum engineers, data analysts, managers and decision makers and those who are involved in subsurface exploration and reservoir management.

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

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.

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:

Dr. Chris Kapetan, PhD, MSc, is a **Senior Drilling & Petroleum Engineer** with **40 years** of international experience within the **onshore** and **offshore oil** & **gas** industry. His wide experience covers **Cased Hole Logging** Interpretation, **Cased Hole Formation** Evaluation, **Cased Hole** Applications, **Data Acquisition** in **Cased-hole Logging**, **Drill String Design & Drilling** Optimization, **Drill String Design** Calculations, Enhanced Oil Recovery (**EOR**), Improved Oil Recovery (**IOR**), Performance Analysis, Prediction, and Optimization Using **NODAL** Analysis, **Stuck Pipe** Prevention, **Stuck Piping & Fishing** Operation, **Fishing** Operations, **Fishing** Techniques, **Fishing** Methodologies, **Wireline Fishing** Procedures, **Wireline & Coil Tubing**, **Coiled Tubing Fishing** Operation, **Coiled Tubing Technology**, **Fishing** Options in **Horizontal Wells**, **Horizontal & Multilateral Wells**, **Well Completion & Stimulation**, **Artificial Lift System Selection & Design**, **Drilling Practices**, **Drilling Fluids Technology**, **Drilling** Operations, Simulation Program for **The International Petroleum Business**, **International Oil Supply**, **Transportation**, **Refining & Trading**, **Control Well-Flow Lines Parameters**, **Decision Analytic Modelling Methods** for **Economic Evaluation**, **Probabilistic Risk Analysis** (**Monte Carlo Simulator**) **Risk Analysis Foundations**, **Global Oil Demand**, Crude Oil Market, Global Oil Reserves, Oil Supply & Demand, Governmental Legislation, Contractual Agreements, **Financial** Modeling, **Oil Contracts**, **Project Risk Analysis**, **Feasibility Analysis** Techniques, **Capital Operational Costs**, Oil & Gas Exploration Methods, **Reservoir** Evaluation, **Extraction of Oil & Gas**, **Crude** Oil Types & Specifications, Sulphur, Sour Natural Gas, **Natural Gas Sweeting**, **Petroleum Production**, Field Layout, **Production** Techniques & Control, **Surface Production** Operations, **Oil Processing**, Oil Transportation-Methods, **Flowmetering & Custody Transfer** and **Oil Refinery**. Further, he is also well-versed in Enhanced Oil Recovery (**EOR**), Electrical Submersible Pumps (**ESP**), **Oil Industries Orientation**, **Geophysics**, Production **Operations**, Production **Management**, Perforating **Methods & Design**, Perforating **Operations**, **Fishing** Operations, **Well & Reservoir** Testing, **Reservoir Stimulation**, **Hydraulic Fracturing**, **Carbonate** Acidizing, **Sandstone** Acidizing, **Petroleum Business**, **Petroleum Economics**, **Field Development Planning**, **Gas Lift Valve** Changing & Installation, **Well Completion** Design & Operation, Well **Surveillance**, Well **Testing**, Well **Stimulation** & **Control** and **Workover Planning**, **Completions** & **Workover**, **Rig Sizing**, **Hole Cleaning** & **Logging**, **Well Completion**, **Servicing** and **Work-Over Operations**, Practical **Reservoir Engineering**, **X-mas Tree & Wellhead** Operations, **Advanced Petrophysics/Interpretation** of **Well Composite**, **Construction Integrity** & **Completion**, **Corrosion Control**, **Slickline**, **Pipeline Pigging**, **Corrosion Monitoring**, **Cathodic Protection** as well as Root Cause Analysis (**RCA**), Root Cause Failure Analysis (**RCFA**), **Gas Conditioning & Process Technology**, **Production Safety** and **Delusion of Asphalt**. Currently, he is the **Operations Consultant** & the **Technical Advisor** at **GEOTECH** and an independent **Drilling Operations Consultant** of various engineering services providers to the international clients as he offers his expertise in many areas of the **drilling & petroleum discipline** and is well **recognized & respected** for his process and procedural expertise as well as ongoing participation, interest and experience in continuing to promote technology to producers around the world.

Throughout his long career life, Dr. Chris has worked for many international companies and has spent several years **managing** technically **complex wellbore interventions** in both **drilling** & **servicing**. He is a **well-regarded** for his **process** and **procedural expertise**. Further, he was the **Operations Manager** at **ETP Crude Oil Pipeline Services** where he was fully responsible for optimum operations of crude oil pipeline, **workover** and **directional drilling**, **drilling rigs** and equipment, drilling of various geothermal deep wells and **exploration wells**. Dr. Chris was the **Drilling** & **Workover Manager** & **Superintendent** for **Kavala Oil** wherein he was responsible for supervision of **drilling operations** and **offshore exploration**, quality control of performance of **rigs**, **coiled tubing**, crude oil transportation via pipeline and abandonment of **well** as per the API requirements. He had occupied various key positions as the **Drilling Operations Consultant**, **Site Manager**, **Branch Manager**, **Senior Drilling** & **Workover Manager** & **Engineer** and **Drilling** & **Workover Engineer**, **Operations Consultant**, **Technical Advisor** in several petroleum companies responsible mainly on an **offshore** sour oil field (under water flood and gas lift) and a gas field. Further, Dr. Chris has been a **Professor** of the **Oil Technology College**.

Dr. Chris has **PhD** in **Reservoir Engineering** and a **Master's** degree in **Drilling & Production Engineering** from the **Petrol-Gaze Din Ploiesti University**. Further, he is a **Certified Surfaced BOP Stack Supervisor** of **IWCF**, a **Certified Instructor/Trainer**, a **Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management** (**ILM**) and has conducted **numerous short courses**, **seminars** and **workshops** and has published several technical books on **Production Logging**, **Safety Drilling Rigs** and **Oil Reservoir**.

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(s) may modify this program before or during the workshop 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 Petrel Software****: Its Capabilities in Geological Modeling*
0930 – 0945	*Break*
0945 – 1030	***Navigating the Petrel Interface****: Understanding the Workspace, Tools & Navigation*
1030 – 1130	***Data Import & Management****: Best Practices for Importing Geological Data*
1130 – 1215	***Basic Mapping Techniques in Petrel****: Creating Simple Geological Maps*
1215 – 1230	*Break*
1230 – 1330	***Visualization Tools in Petrel****: Effective Ways to Visualize Geological Data*
1330 – 1420	***Creating Base Maps & Grids****: Fundamentals of Grid Creation for Geological Mapping*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Contouring & Surface Mapping****: Techniques for Creating Contour & Surface Maps*
0830 – 0930	***Fault Modeling & Representation****: Accurately Modeling Faults in Geological Maps*
0930 – 0945	*Break*
0945 – 1100	***3D Geological Modeling****: Building Three-Dimensional Geological Models*
1100 – 1215	***Integrating Seismic Data with Geological Maps****: Combining Seismic Interpretation with Geological Mapping*
1215 – 1230	*Break*
1230 – 1330	***Volume Calculations & Estimations****: Using Petrel for Resource Estimation*
1330 – 1420	***Case Studies****: Real-World Examples of Geological Mapping in Petrel*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0830	**Petrophysical Modeling**: *The Basics of Petrophysical Analysis*
0830 – 0930	**Well Log Interpretation & Analysis**: *Techniques for Analyzing Well Logs*
0930 – 0945	*Break*
0945 – 1100	**Petrophysical Property Modeling**: *Methods for Modeling Properties Like Porosity and Permeability*
1100 – 1215	**Crossplot Analysis**: *Utilizing Crossplots for Data Interpretation*
1215 – 1230	*Break*
1230 – 1330	**Integrating Core Data**: *Incorporating Core Analysis Data into Geological Models*
1330 – 1420	**Practical Exercise**: *Petrophysical Modeling Based on Real Data*
1420 – 1430	**Recap**
1430	*Lunch & End of Day Three*

Day 4

|	
0730 – 0830	**Workflows in Petrel**: *Basics of Workflow Development*
0830 – 0930	**Automating Geological Processes**: *Creating Automated Workflows for Geological Tasks*
0930 – 0945	*Break*
0945 – 1100	**Customizing Workflows for Specific Projects**: *Tailoring Workflows to Project Needs*
1100 – 1215	**Efficiency Tips & Tricks in Workflow Creation**: *Best Practices for Efficient Workflow Development*
1215 – 1230	*Break*
1230 – 1330	**Scripting for Advanced Workflow Automation**: *Scripting within Petrel*
1330 – 1420	**Group Activity**: *Developing a Custom Workflow for a Geological Task*
1420 – 1430	**Recap**
1430	*Lunch & End of Day Four*

Day 5

0730 – 0830	**Integrating Geological Models with Reservoir Simulation**: *Techniques for Combining Static & Dynamic Models*
0830 – 0930	**Quality Control & Validation of Geological Models**: *Ensuring Accuracy & Reliability*
0930 – 0945	*Break*
0945 – 1100	**Effective Reporting & Presentation of Geological Models**: *Creating Impactful Reports & Presentations*
1100 – 1230	**Best Practices in Geological Modeling & Mapping**: *Consolidating Key Methodologies & Approaches*
1230 – 1245	*Break*
1245 – 1345	**Emerging Trends in Geological Modeling & Software Technologies**: *Discussing Future Developments in the Field*
1345 – 1400	**Course Conclusion**
1400 – 1415	**POST-TEST**
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Haward Technology Middle East

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
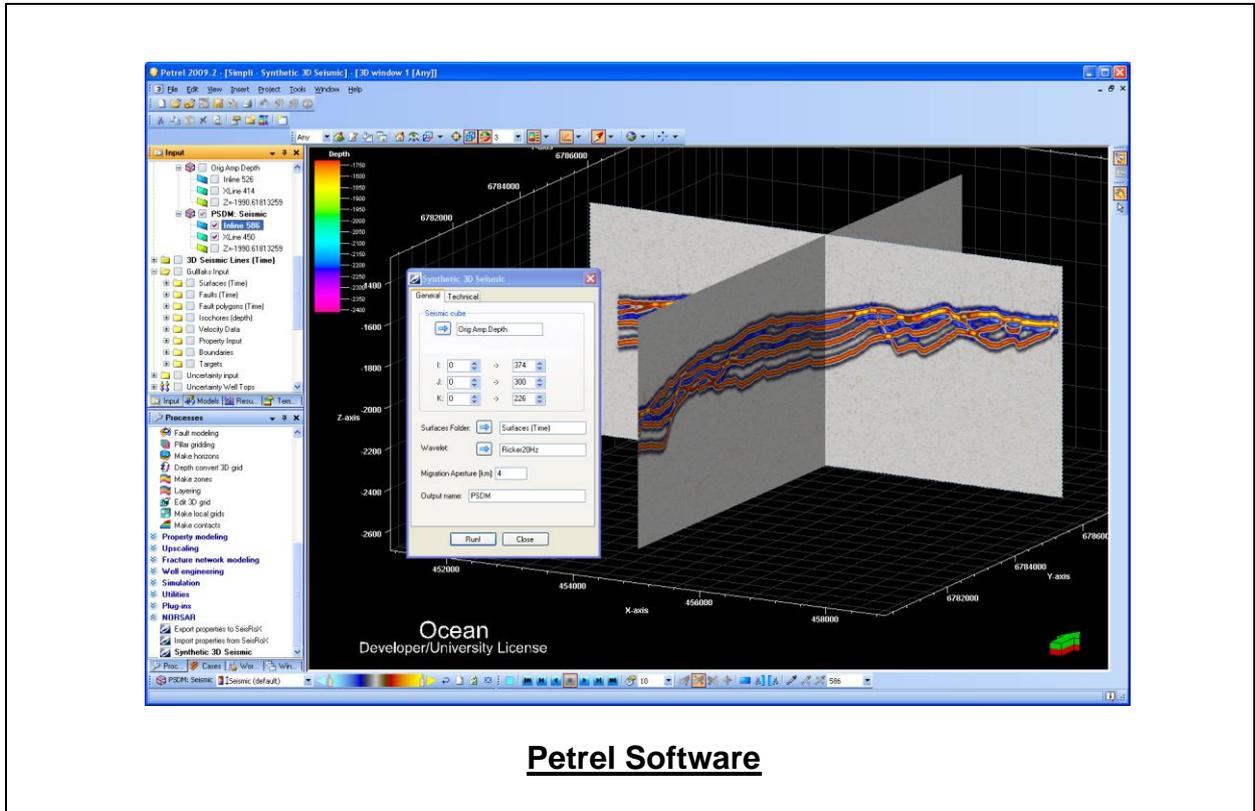
Course Coordinator

Jaryl Castillo, Tel: +974 4423 1327, Email: jaryl@haward.org