

COURSE OVERVIEW DE0805 **Coring and Core Analysis**

Course Title

Coring and Core Analysis

Course Date/Venue

Please see page 3

Course Reference

DE0805

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 Coring and Core Analysis and Special Core Analysis. It covers the applications and types of coring and the selection criteria for coring intervals; the core acquisition techniques, core handling at the wellsite, core orientation and marking; the core preservation methods, health, safety, and environmental considerations and core preparation for analysis; the porosity measurement, permeability determination, grain density and mineralogy; and the fluid saturation measurements and routine data quality control.



During this interactive course, participants will learn the difference between SCAL and routine core analysis; the capillary pressure measurements and relative permeability measurements; the wettability evaluation, electrical properties and formation factor; the SCAL data integration and relative permeability in complex rocks; the fracture and matrix analysis, NMR and digital rock physics; the SCAL in unconventional reservoirs, designing a SCAL program and integrating core and log data; and the reservoir characterization using core data, applications in static and dynamic models, quality control in core laboratories and core data reporting and communication.

Course Objectives

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

- Apply and gain an in-depth knowledge on coring and core analysis and special core analysis
- Discuss the applications and types of coring and the selection criteria for coring intervals
- Carryout core acquisition techniques, core handling at the wellsite, core orientation and marking
- Employ core preservation methods, health, safety, and environmental considerations and core preparation for analysis
- Apply porosity measurement and discuss permeability determination, grain density and mineralogy
- Implement fluid saturation measurements and routine data quality control
- Differentiate SCAL versus routine core analysis and apply capillary pressure measurements and relative permeability measurements
- Carryout wettability evaluation and identify electrical properties and formation factor
- Employ SCAL data integration and describe relative permeability in complex rocks
- Apply fracture and matrix analysis and discuss NMR and digital rock physics
- Interpret SCAL in unconventional reservoirs, design a SCAL program and integrate core and log data
- Carryout reservoir characterization using core data, applications in static and dynamic models, quality control in core laboratories and core data reporting and communication

Exclusive Smart Training Kit - H-STK®



*Participants of this course will receive the exclusive “Howard 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

The course provides an overview of all significant aspects and considerations of special core analysis for geoscientists, reservoir engineers, exploration and development geologists, core and log analysts, geophysicists, drilling and completion engineers.

Course Date/Venue

Session(s)	Date	Venue
1	April 05-09, 2026	Meeting Room 4, Four Seasons Hotel Cairo at Nile Plaza, Corniche El Nil, Garden City, Cairo, Egypt
2	May 31-June 04, 2026	Pierre Lotti Meeting Room, Movenpick Hotel Istanbul Golden Horn, Istanbul, Turkey
3	June 29-July 03, 2026	Ruben Boardroom, The Rubens at The Palace, Buckingham Palace Road, London, United Kingdom
4	August 09-13, 2026	Meeting Plus 9, City Centre Rotana, Doha, Qatar
5	October 04-08, 2026	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
6	November 30-December 04, 2026	Salon Expo, NH Hotel Plaza de Armas, Seville, Spain
7	January 10-14, 2027	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
8	March 14-18, 2027	Meeting Plus 9, City Centre Rotana, Doha, Qatar

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.

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. Dimitri Massaras is a **Senior Drilling Engineer & Certified Professional Geologist** with over **40 years** of **Offshore & Onshore** experience within the **Oil & Gas** industries. His expertise widely covers **Pore Pressure Prediction & Wellbore Stability, Formation Pressure & Well Control, Pore Pressure Analysis & Risk Mitigation, Geomechanics** for Pore Pressure and Fracture Gradient Analysis, **Well Control & Blowout Prevention, Drilling Hydraulics & Well Control Principles, Play Assessment & Prospect Evaluation, Basin Potential Assessment, Petroleum Trilogy** Relative Timings of Events, **Prospect Analysis & Evaluation, Source Rock Estimation, Cross Correlation & Interpretation with Seismic Data, Calculation Parameters & Estimation of Uncertainties, Reserve Estimation & Uncertainty, Reserve Evaluation, Uncertainty Calculations, Prospect Evaluation, Risk Analysis, Exploration Prospect Conversion** in Potential Reservoir, **Well Potential Productivity Assessment, Potential Field Development Plan, Shale Plays Evaluation & Finding Sweet Spots, Shale Explosion, Geochemical Aspects, Unconventional Shale Plays, Shale Hydrocarbon Reservoirs & their Evaluation, Sweet Spot Determination, Shale Exploration, Introduction to Data Management, The International Petroleum Business, Commercial Acumen of the Oil & Gas Value Chain, DTS (Distributed Temperature Sensing) Production & Injection Well Testing, Control Well-Flow Lines Parameters, Casing & Cementing, Cased Hole Logging, Case Hole Formation Evaluation, Reservoir Management, Reservoir Engineering, Development Geology, Petroleum Geology, Exploration Production, Tectonics & Structural Development, Petroleum Systems, Reservoir Characterization, Clastic Reservoir, Carbonate Reservoir, Subsurface Facies Analysis, Borehole Images, Geophysical Methods, Oil & Gas Exploration, Exploration Geochemistry, Structural Geology, Wellsite Geology, Geologic Modeling, Analytic Modelling Methods, Economic Evaluation, Petroleum Geology, Geophysics, Geophysical Exploration, Advanced Petrophysics, Petroleum Exploration, Petroleum Economics, Petroleum Engineering, Reservoir Modelling, Drilling, Core Analysis, Core-to-Log Data Integration (SCAL), Basin Modelling & Total Petroleum System (TPS), Seismic Interpretation, Seismic Methods, Seismic Coherence Techniques, Seismic Attribute Analysis, Seismic Inversion Techniques, Well Logging, Rock Physics & Seismic Data, Formation Evaluation, Well Testing & Data Interpretation and Oil & Gas Reserves Estimations. He is also an expert in **Risk Analysis, Refining Unit (De-asphalting), Catalytic Cracking Unit (CCU), Lube Oil Unit, Lighter Fluid Unit, Oil, Gas & Water Samples for HPLC Testing and Analysis, Petrel, SeisWorks, StrataModel, Finder, Charisma, Zmap, Seitex, LogTech & GeoLog, ASU, VSPC** and many more. Currently, he is the **Senior Petroleum Trainer & Asset Manager** of one of the leading exploration companies wherein he is in-charge of **petroleum exploration** in various regions particularly in **Algeria and Europe**.**

During his long career, Mr. Massaras has gained his practical and field experience through his various significant positions and dedication as the **Drilling Manager, Senior Petroleum Consultant/Instructor/Trainer, Technical Trainer, Senior Geologist, Project Geologist, Operations Geologist and Refinery Unit Operator** of numerous international companies such as the **Pennzoil E & P Company, Petrofina SA and Gulf Oil E & P Company** just to name a few.

Mr. Massaras, a **Certified Professional Geologist** from the **American Institute of Professional Geologist** and has a **Bachelor's** degree in **Petroleum Geology & Geophysics** from the **University of Massachusetts, USA**. Further, he is a **Certified Instructor/Trainer; a Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)**; a former **Director** of Swiss Section of the **Society of Petroleum Engineers (SPE)**; an active member of **Swiss Association of Energy Geoscientists (SASEG)** and has delivered innumerable trainings 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.

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

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Overview of Coring Operations Objectives & Applications of Coring • Types of Coring (Conventional, Sidewall, Rotary) • Selection Criteria for Coring Intervals • Planning Coring Programs
0930 – 0945	Break
0945 – 1045	Core Acquisition Technique Core Barrel Types & Configurations • Wireline versus Conventional Coring • Drilling Fluid Compatibility • Core Recovery Optimization
1045 – 1145	Core Handling at Wellsite Procedures for Safe Core Retrieval • Labeling, Orientation & Initial Inspection • Core Transportation & Storage • Preservation of Core Integrity
1145 – 1230	Core Orientation & Marking Importance of Core Orientation • Techniques: Mechanical Orientation Tools, Imaging • Oriented Core Applications • Quality Assurance Practices
1230 – 1245	Break
1245 – 1330	Core Preservation Methods Preservation of Hydrocarbons & Water • Use of Sealing Agents, Freezing, or Refrigeration • Core Shrinkage & Swelling Issues • Preserving Fragile Formations
1330 – 1420	Health, Safety & Environmental Considerations Handling Hazardous Materials • HSE Policies in Coring Operations • Waste Disposal & Contamination Control • Emergency Response Planning
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

0730 – 0830	Core Preparation for Analysis Slabbing & Plugging • Cleaning & Drying Methods • Sample Selection Strategy • Preservation of Plug Quality
0830 – 0930	Porosity Measurement Helium Porosimetry • Boyle's Law & Gas Expansion Methods • Interpretation & Limitations • Comparison with Log-Derived Porosity
0930 - 0945	Break
0945 – 1130	Permeability Determination Steady-State versus Unsteady-State Methods • Gas versus Liquid Permeability • Anisotropy & Directionality • Darcy's Law Fundamentals
1130 - 1230	Grain Density & Mineralogy Pycnometry & Density Logging • XRD/XRF Integration • Identifying Non-Reservoir Minerals • Lithofacies Characterization
1230 - 1245	Break
1245 - 1330	Fluid Saturation Measurements Dean-Stark Extraction • Centrifuge & Distillation Methods • Irreducible Water Saturation • Capillary Pressure Correlation
1330 - 1420	Routine Data Quality Control Repeatability & Reproducibility • Sample Representativeness • Error Sources & Uncertainty • Documentation & Reporting Standards
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

0730 – 0830	SCAL versus Routine Core Analysis Key Differences & Data Applications • SCAL Workflow Overview • Role in Reservoir Simulation • Limitations & Challenges
0830 – 0930	Capillary Pressure Measurements Mercury Injection Capillary Pressure (MICP) • Centrifuge & Porous Plate Methods • Leverett J-Function Application • Saturation-Height Modeling
0930 - 0945	Break
0945 – 1130	Relative Permeability Measurements Steady-State & Unsteady-State Methods • Data Requirements for Simulation • Oil-Water, Gas-Oil & Three-Phase Tests • Data Normalization & Upscaling
1130 - 1230	Wettability Evaluation Qualitative & Quantitative Approaches • Amott-Harvey & USBM Methods • Contact Angle Measurements • Impact on Multiphase Flow
1230 - 1245	Break
1245 - 1330	Electrical Properties & Formation Factor Archie's Equation • Formation Resistivity Factor • Cementation & Saturation Exponents • Core-Log Calibration

1330 - 1420	SCAL Data Integration Linking SCAL to Log & Reservoir Models • Data Scaling & Uncertainties • Reservoir Rock Types & Flow Units • Use in Enhanced Oil Recovery (EOR) Planning
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

0730 - 0830	Relative Permeability in Complex Rocks Carbonates versus Clastics • Dual Porosity Systems • Challenges in Low-Permeability Rocks • Fractured Reservoir Considerations
0830 - 0930	Fracture & Matrix Analysis Core Fracture Analysis • Laboratory Fracture Modeling • Permeability Anisotropy in Fractured Media • Matrix-Fracture Interaction
0930 - 0945	Break
0945 - 1130	NMR & Digital Rock Physics Nuclear Magnetic Resonance (NMR) on Cores • Pore Size Distribution & Free/Bound Fluids • Micro-CT & Image-Based Modeling • Digital Core Analysis Applications
1130 - 1230	SCAL in Unconventional Reservoirs Shale & Tight Gas Formations • Low-Perm Relative Permeability • SCAL Test Design in Unconventional Plays • Use of Core Data in Resource Assessment
1230 - 1245	Break
1245 - 1330	EOR-Specific SCAL Studies Wettability Alteration Monitoring • Polymer & Surfactant Flood Compatibility • CO ₂ Injection & Miscibility Effects • Data Needs for EOR Modeling
1330 - 1420	Designing a SCAL Program Project Objective Alignment • Laboratory Selection & Test Sequence • Time & Budget Considerations • QA/QC & Data Validation
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

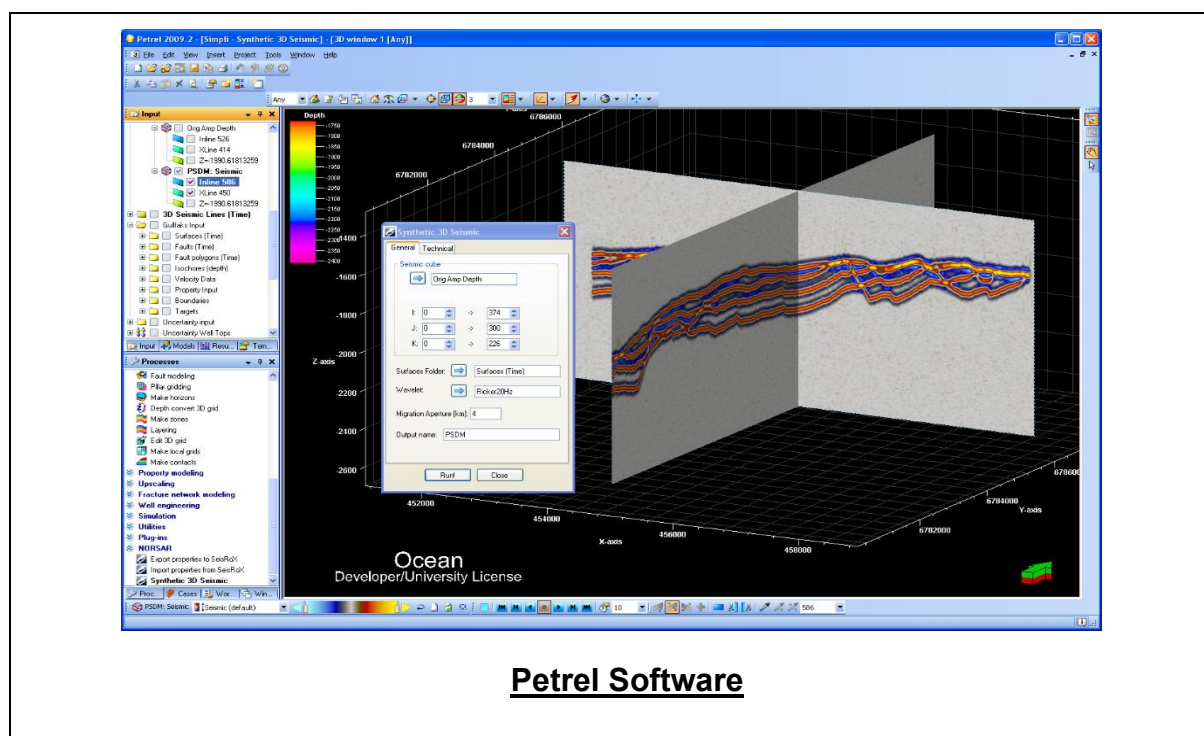
Day 5

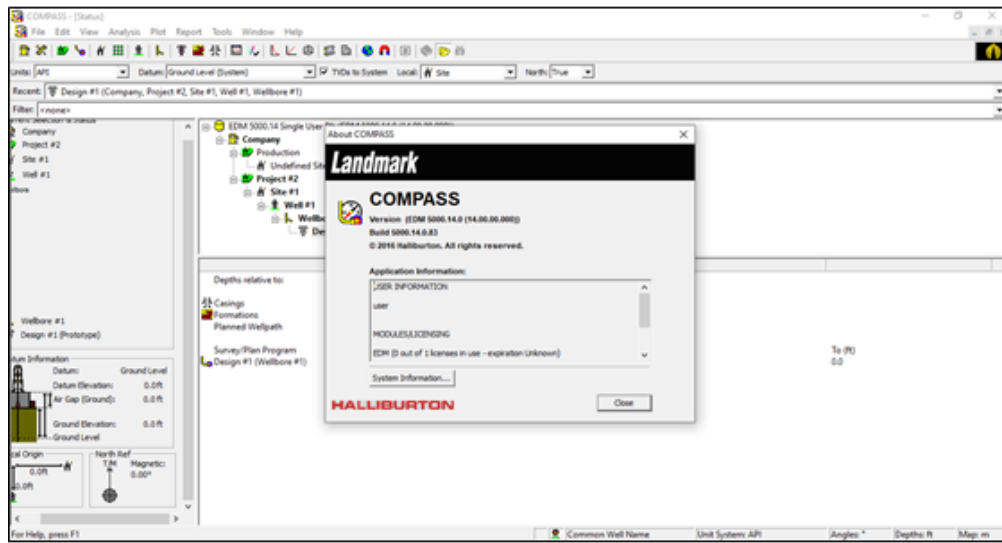
0730 - 0930	Integration of Core & Log Data Matching Core Depth to Log Depth • Scaling Core Data to Reservoir Conditions • Calibrating Petrophysical Models • Cross-Validation of Datasets
0930 - 0945	Break
0945 - 1030	Reservoir Characterization Using Core Data Flow Unit Classification • Rock Typing & Zonation • Core-Based Permeability Models • Reservoir Quality Indexing
1030 - 1130	Applications in Static & Dynamic Models Input to Static Model Facies & Properties • Dynamic Model Initialization • History Matching & Validation • SCAL in Uncertainty Analysis
1130 - 1230	Quality Control in Core Laboratories Standard Operating Procedures • ISO & API Best Practices • Audits & Benchmarking • Vendor Selection & Evaluation

1230 - 1245	Break
1245 - 1300	Core Data Reporting & Communication Structuring Technical Reports • Visualization & Data Interpretation • Collaboration with Multi-Disciplinary Teams • Case Study Presentations
1300 - 1345	Workshop: Core Data Interpretation & Case Studies Hands-on Exercise: Interpreting Porosity/Permeability • Capillary Pressure & Saturation Height Curve Generation • Relative Permeability Interpretation Session • Group-Based Core Analysis Project & 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

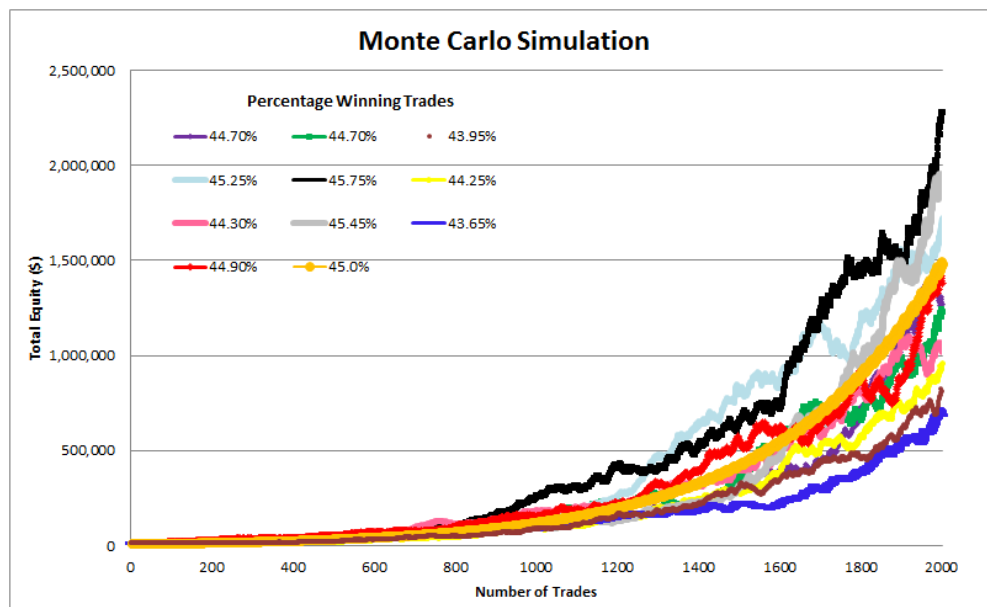
Simulator (Hands-on Practical Sessions)

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 the “Petrel Software”, “COMPASS”, “Monte Carlo”, “Interactive Petrophysics (IP)”, “ECRIN”, “Eclipse Software”, “PIPESIM” and “PROSPER” software’s.

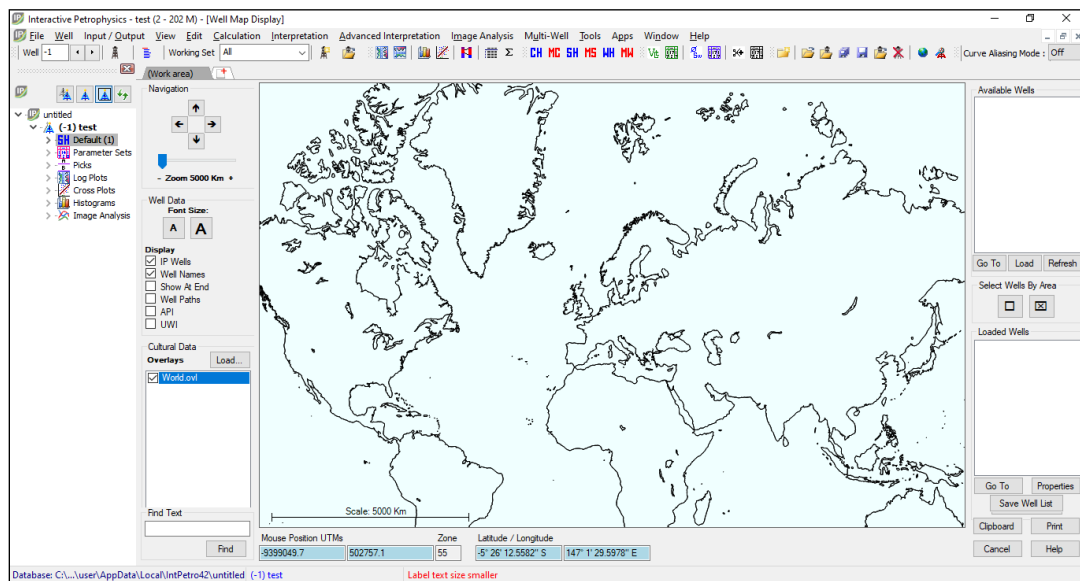




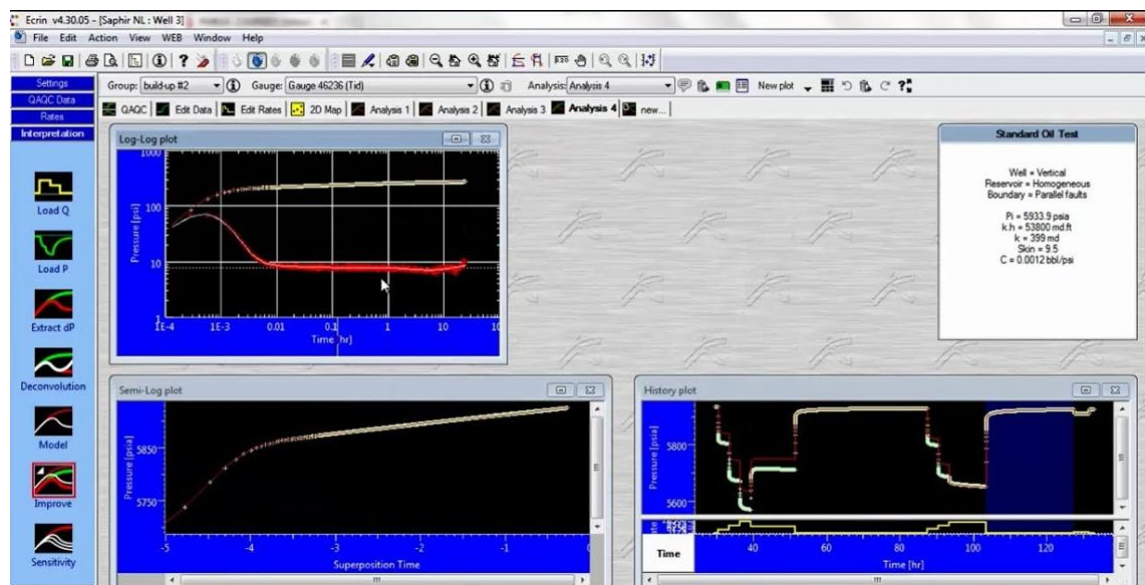
COMPASS



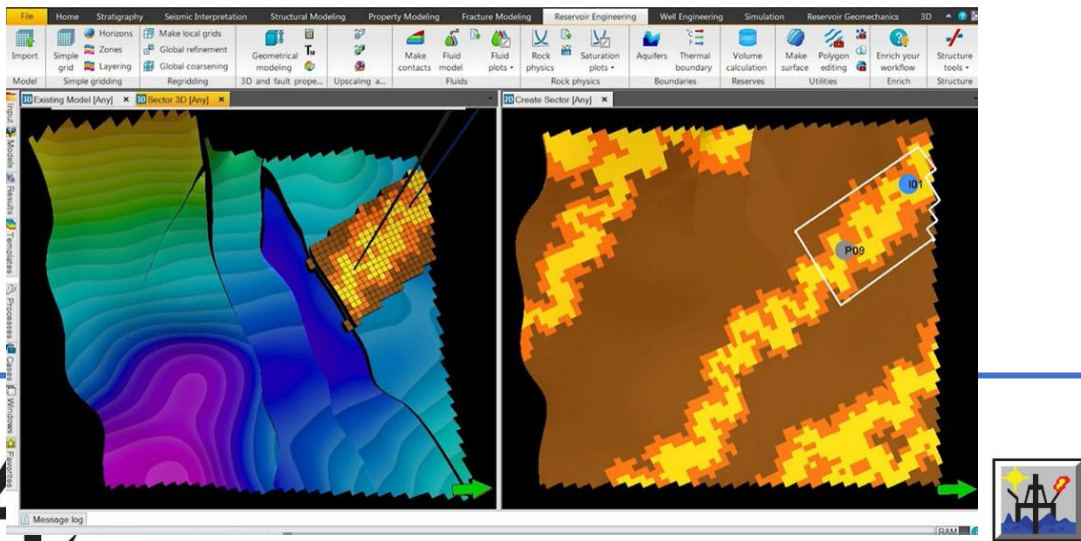
Monte Carlo Simulation



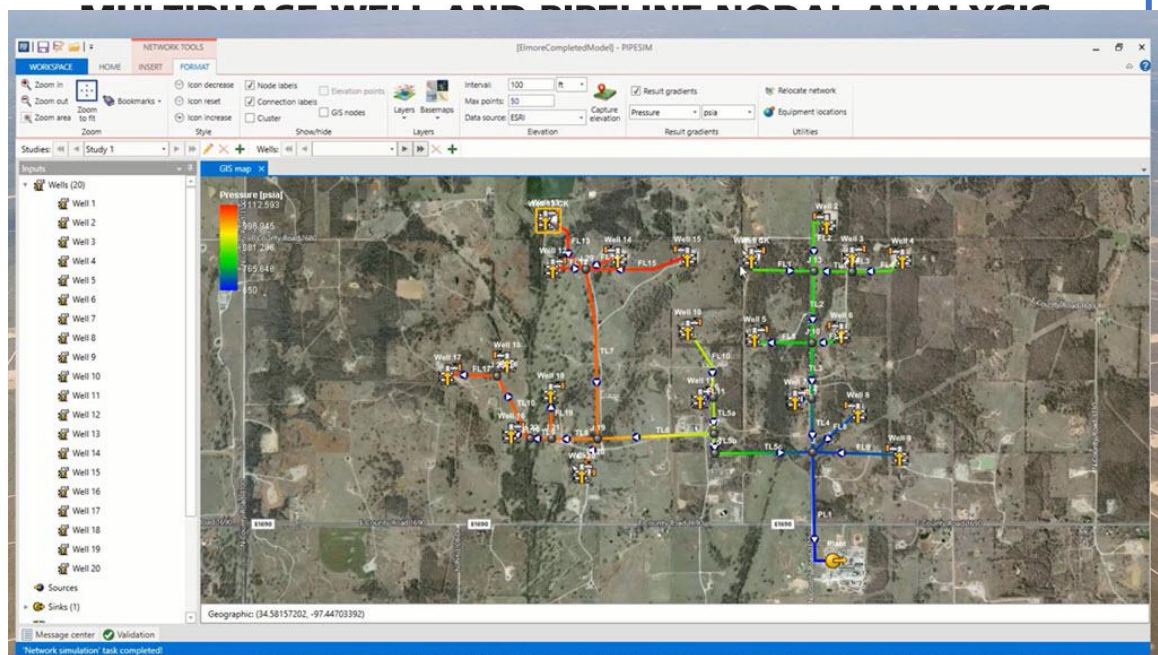
Interactive Petrophysics (IP) Software



ECRIN Software



Eclipse Software

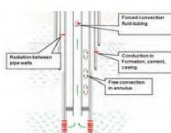


PIPESIM

LIFT SYSTEMS



THERMAL MODELLING



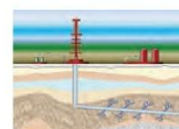
PERFORATION DESIGN AND PERFORMANCE



MULTILATERAL COMPLETIONS



INFLOW (IPRs) MODELS



Course Coordinator

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