# COURSE OVERVIEW DE0100
# Workovers & Completions

**Course Title**
Workovers & Completions


**Course Date/Venue**
Session 1: November 23-27, 2025/Meeting Plus 9, City Centre Rotana, Doha, Qatar
Session 2: January 25-29, 2026/Meeting Plus 9, City Centre Rotana, Doha, Qatar



**Course Reference**
DE0100

**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 primarily designed for drilling, production and completion engineers and supervisors needing a practical understanding and an appreciation of well completion design and operations, well stimulation and work over planning. It explains how completion configurations are varied to meet well objectives and to maximize well productivity. Design concepts and methods are presented together with downhole tools and their selection criteria.

Completion types and design for vertical, horizontal and multilateral wells, design and optimization of tubing based on tubing performance analysis (Inflow performance analysis, liquid and gas hold up during fluid flow and forces on tubing), downhole equipment, tubing accessories, wellhead equipment including sub sea completion. Also, fluid flow through perforations and perforation techniques; communication tests; wireline operations; reservoir stimulation; and hydraulic fracture treatment design and optimization are extensively reviewed. Local case studies are also provided.

## Course Objectives

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

- Apply systematic techniques in well testing, completion and operations, well stimulation and workover
- Optimize tubing dimensions for maximum production and estimate the pressure losses in tubing for different rock & fluid properties
- Use different subsurface completion equipments and accessories and select packers and packer settings
- Operate the well head equipments properly and calculate geometries and dimensions casing and tubing hangers
- Identify the different special consideration for horizontal and multilateral completions on wellbore, tubing and casing configuration
- Recognize the components of perforation of oil and gas wells such as completion fishing operations, well stimulation and fracturing, well testing, and well integrity
- Carryout the various procedures of communication tests
- Practice the process of wireline operations
- Discuss the elements of reservoir stimulation and increase the knowledge in understanding of stress and rock properties involved in the simulation techniques

## 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 and methodologies on well testing, completion and operation, well stimulation and workover for well and senior petroleum engineers, drilling and senior drilling supervisors, reservoir and senior reservoir engineers, geologists, production and completion engineers and supervisors needing a practical understanding and an appreciation of well completion design and operation, well stimulation and work over planning.

## 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

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 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 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 Petroleum Engineer** with over **30 years** of international experience within the **onshore** and **offshore oil** & **gas** industry. His wide experience covers **Asset Management** Principles, Risks & Economics, **Petroleum Economics**, **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**, Cased Hole **Formation Evaluation**, Cased Hole **Applications**, Cased Hole **Logs**, Production **Operations**, Production **Management**, Perforating **Methods & Design**, Perforating **Operations**, **Fishing** Operations, **Well & Reservoir** Testing, **Reservoir Stimulation**, **Hydraulic Fracturing**, **Carbonate** Acidizing, **Sandstone** Acidizing, **Drilling Fluids Technology**, Drilling **Operations**, **Directional** Drilling, **Artificial Lift**, **Gas Lift Design**, **Gas Lift Operations**, **Petroleum Business**, **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, Maintenance & Testing, **Advanced Petrophysics/Interpretation** of **Well Composite**, **Construction Integrity** & **Completion**, **Coiled Tubing Technology**, **Corrosion Control**, **Slickline**, **Wireline & Coil Tubing**, **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**.

## 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 & Introductions* |
| *0815 – 0830* | ***PRE-TEST*** |
| *0830 – 0930* | ***Well Completion Design***<br>*Single & Dual Completion Design (Packers, Nipples, Tubing, DHSV's, Blast Joints Flow Couplings, Seal Assemblies, Expansion Joints, WLEG, Sliding Sleeves, Ported Nipples) • Planning Essentials Prior to Drilling (Safety, Economics)* |
| *0930 – 0945* | *Break* |
| *0945 – 1100* | ***Well Completion Design (cont'd)***<br>*Wellbore Tubing-Casing Configuration • Completion Procedures (Well Completion Fluids, Well Control & Damage Prevention)* |
| *1100 – 1230* | ***Well Completion Design (cont'd)***<br>*Work Over Considerations • Artificial Lift Requirements on Completion Design* |
| *1230 – 1245* | *Break* |
| *1245 – 1420* | ***Well Completion Design (cont'd)***<br>*Inflow Performance • Completion Variations (Primary Completion - Oil & Gas Wells, Multiple Completion, Secondary Recovery Production Well Completion & Injection Well Completion)* |
| *1420 – 1430* | ***Recap***<br>*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 – 0930* | ***Interval Selection Consideration & Optimization of Tubing Dimensions for Maximum Production***<br>*Production Mechanism for Different Reservoir Types • Completion Efficiency Consideration • Inflow Performance Relationship (IPR) & Effect of Partial Penetration on IPR* |
| *0930 – 0945* | *Break* |
| *0945 – 1100* | ***Interval Selection Consideration & Optimization of Tubing Dimensions for Maximum Production (cont'd)***<br>*Typical IPR Case Studies for Both Oil & Gas Reservoirs • Bottom Hole Flowing Pressure Requirements* |
| *1100 – 1230* | ***Interval Selection Consideration & Optimization of Tubing Dimensions for Maximum Production (cont'd)***<br>*Estimation of Pressure Losses in Tubing for Different Rock & Fluid Properties • Development of Tubing Performance Curve & Optimization of Tubing Dimensions for Maximum Production* |
| *1230 – 1245* | *Break* |

| | |
|---|---|
| *1245 – 1420* | ***Interval Selection Consideration & Optimization of Tubing Dimensions for Maximum Production (cont'd)***<br>*Prediction Rate & Selection of Material Properties Based on Analysis of Forces on Tubing of Tubing • Specialized Software's are Used for Case Studies & Analysis* |
| *1420 – 1430* | ***Recap***<br>*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 – 0930* | ***Subsurface Completion Equipment & Accessories***<br>*Forces on Packers & Tubing Movements • Completion Material Selection • Completion of Running & Retrieving • Selection Consideration of Packers & Packer Settings* |
| *0930 – 0945* | *Break* |
| *0945 – 1100* | ***Subsurface Completion Equipment & Accessories (cont'd)***<br>*Tubing Accessories & Subsurface Safety and Flow Control Valves • Typical Case Studies* |
| *1100 – 1230* | ***Well Head Equipment***<br>*Geometries & Dimensions Casing & Tubing Hanger • Well Heads for Topside & Subsea Completions • Christmas & Subsea Trees* |
| *1230 – 1245* | *Break* |
| *1245 – 1420* | ***Well Head Equipment (cont'd)***<br>*Flow Line, Cokes & Other Control • Valves & Flow Regulating Valves* |
| *1420 – 1430* | ***Recap***<br>*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 – 0930* | ***Special Consideration for Horizontal & Multilateral Completions***<br>*Wellbore, Tubing & Casing Configuration • Well Killing • Tubing Size Selection • Special Equipment for Horizontal & Multilateral Completions • Running & Operational Procedure of Subsurface Equipment* |
| *0930 – 0945* | *Break* |
| *0945 – 1100* | ***Perforation of Oil & Gas Wells***<br>*Completion Fishing Operations • Perforation Methods & Equipment • Well Perforating & Cased Hole Logs • Well Stimulation & Fracturing • Well Testing • Well Integrity* |
| *1100 – 1230* | ***Perforation of Oil & Gas Wells (cont'd)***<br>*Basics of Shape Charge & its Penetration Mechanism • Selection & Evaluation of Shape Charge • API Testing Procedure of Shape Charge Penetration • Shape Charge Gun Categories & Their Application* |

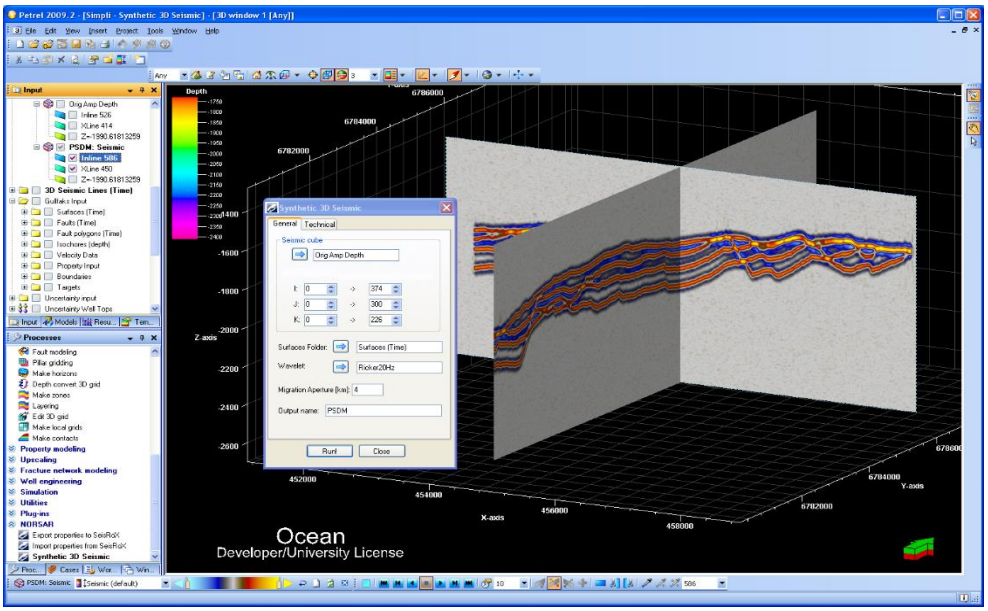
| | |
|---|---|
| *1230 – 1245* | *Break* |
| *1245 – 1420* | ***Perforation of Oil & Gas Wells (cont'd)***<br>*Special Tools & Operations • Calculation of Flow Through Perforation Tunnels & Estimation Production from the Perforation Interval • Nitrogen Lifting • Coiled Tubing Operations* |
| *1420 – 1430* | ***Recap***<br>*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***

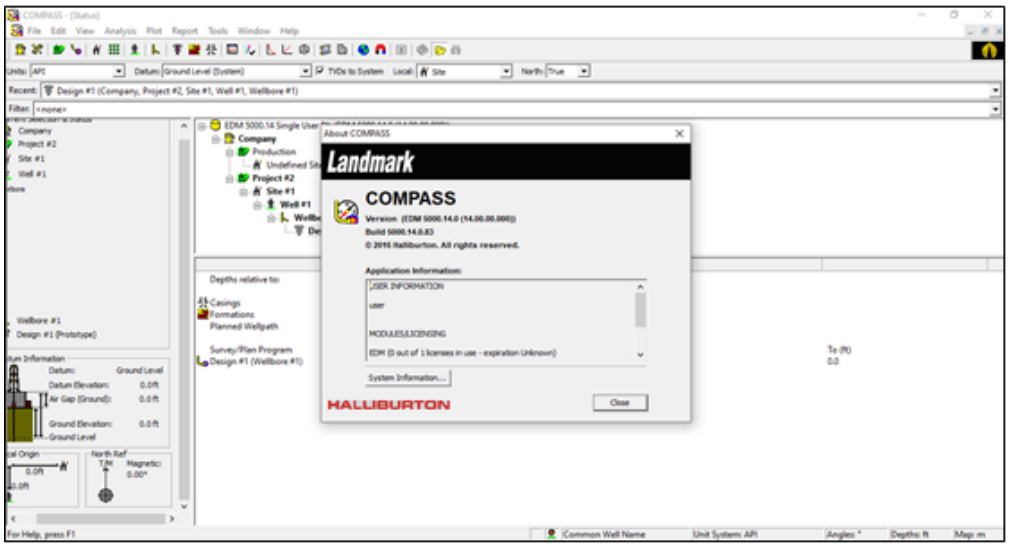
| | |
|---|---|
| *0730 – 0930* | ***Communication Tests*** |
| *0930 – 0945* | *Break* |
| *0945 – 1100* | ***Wireline Operations*** |
| *1100 – 1230* | ***Reservoir Stimulation***<br>*Introduction to Different Stimulation Techniques • Understanding of Stress & Rock Properties Involved in the Selection of Stimulation Techniques • Design Procedure of Hydraulic Fracture Treatment* |
| *1230 – 1245* | *Break* |
| *1245 – 1345* | ***Reservoir Stimulation (cont'd)***<br>*Economic Evaluation of Stimulation Treatment Coupled with a Production • Model Based on NPV • Specialized Softwares Used for Local Case Studies and Analysis* |
| *1345 – 1400* | ***Course Conclusion***<br>*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)

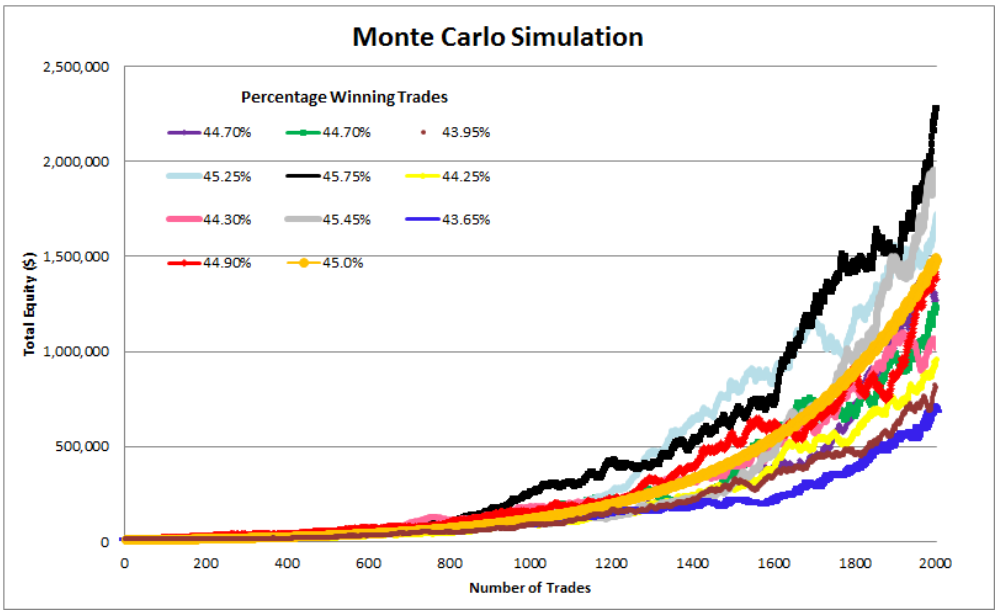
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the "Petrel Software", "COMPASS", "Monte Carlo", "KAPPA", "Interactive Petrophysics (IP)", "Eclipse Software", "PIPESIM"," PETEX IPM Suite", "Three-Phase Black-Oil Reservoir Simulator", "PROSPER", "MBAL" and "GAP" software's.



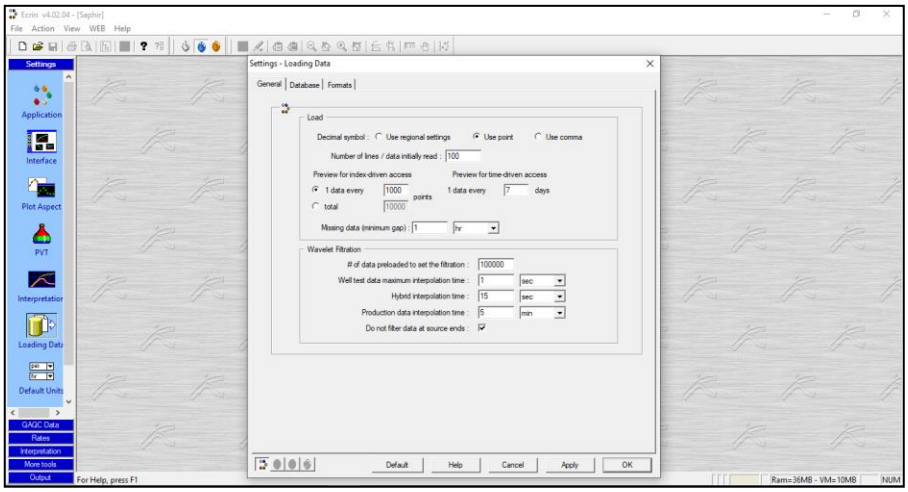

**Petrel Software**



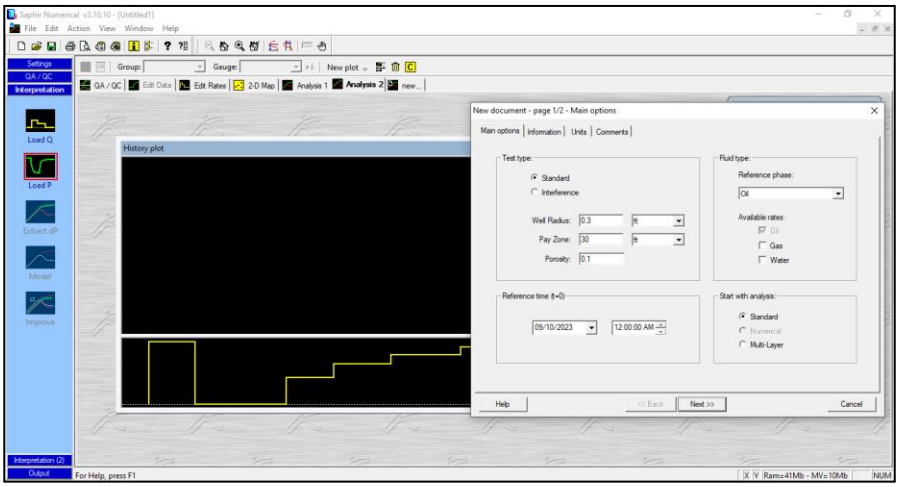

**COMPASS**



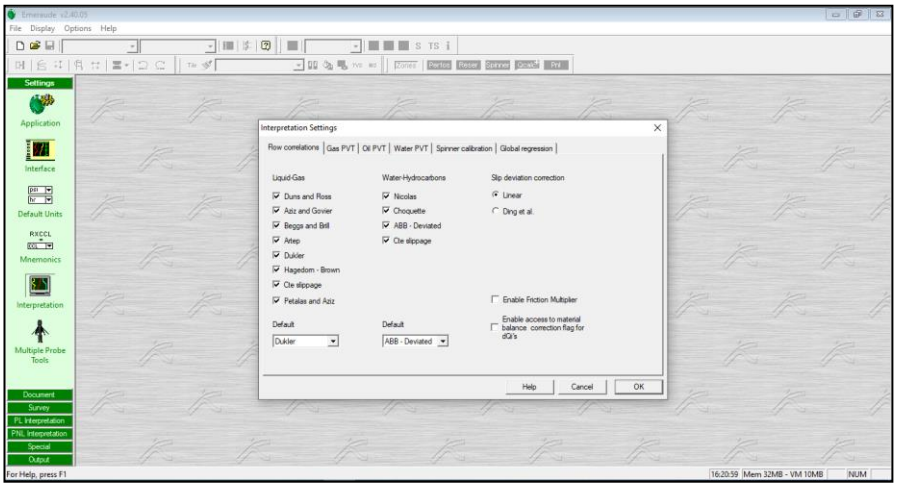

## Monte Carlo Simulation



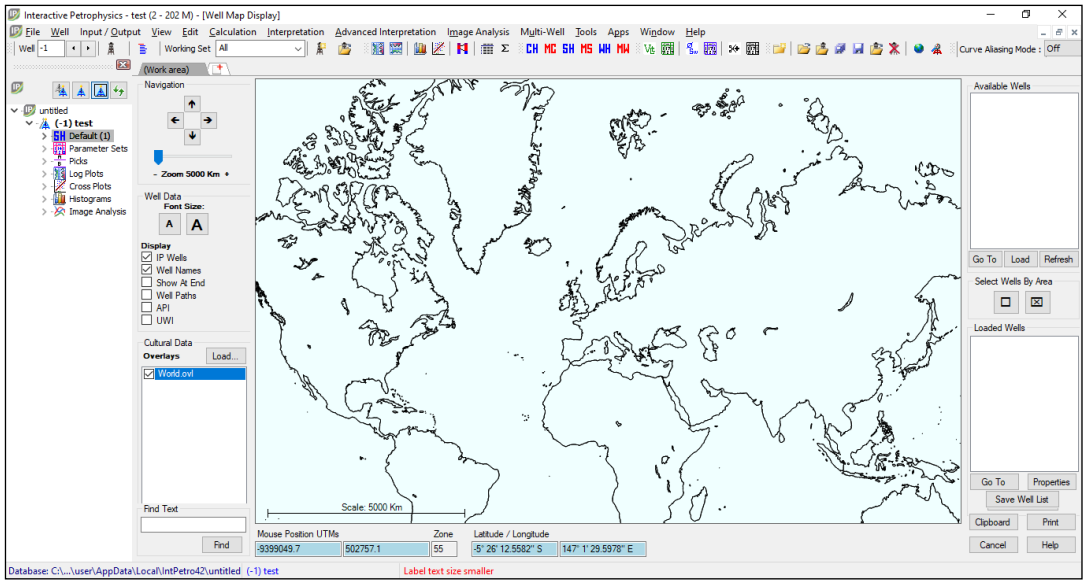

## KAPPA Ecrin v4.02.04



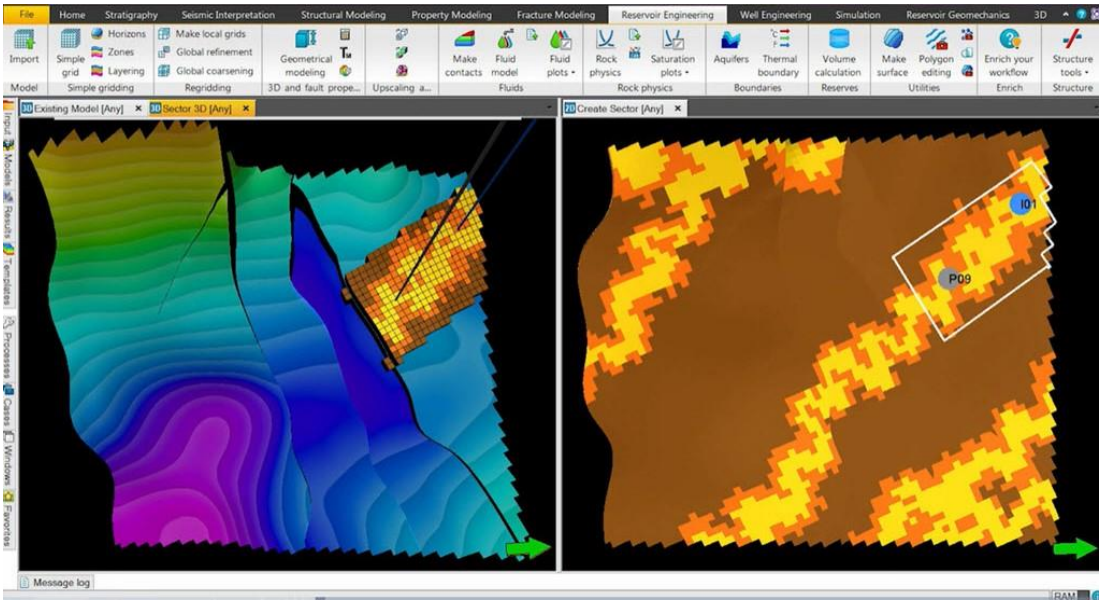
**KAPPA Saphir v3.10.10**



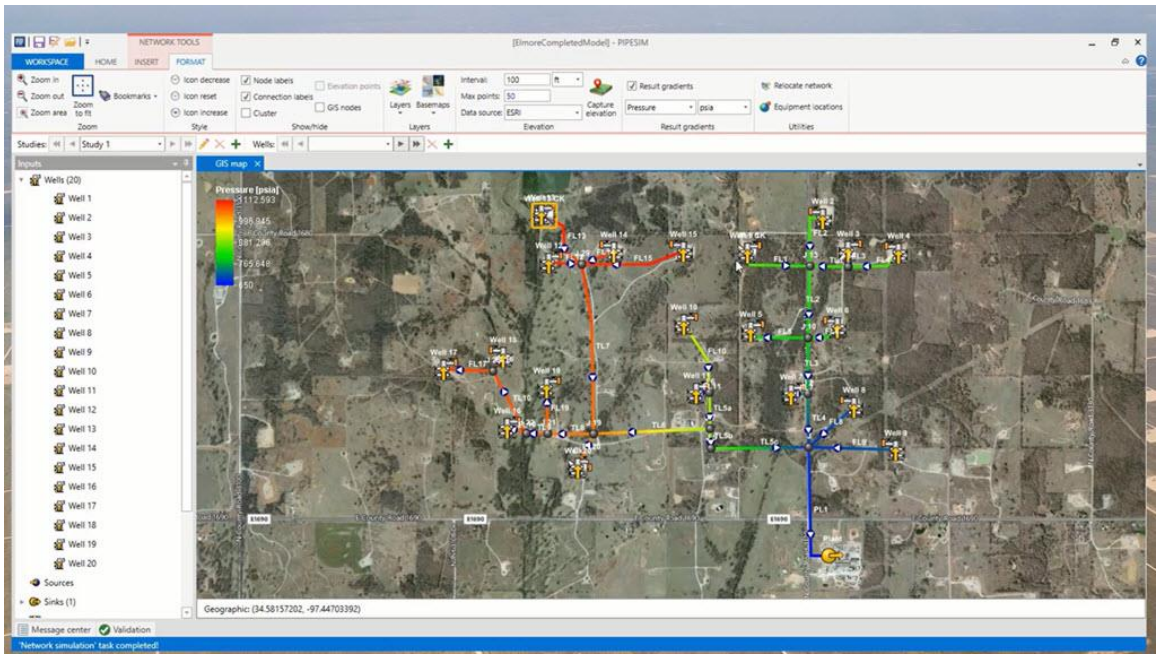
**KAPPA Emeraude v2.40.05**



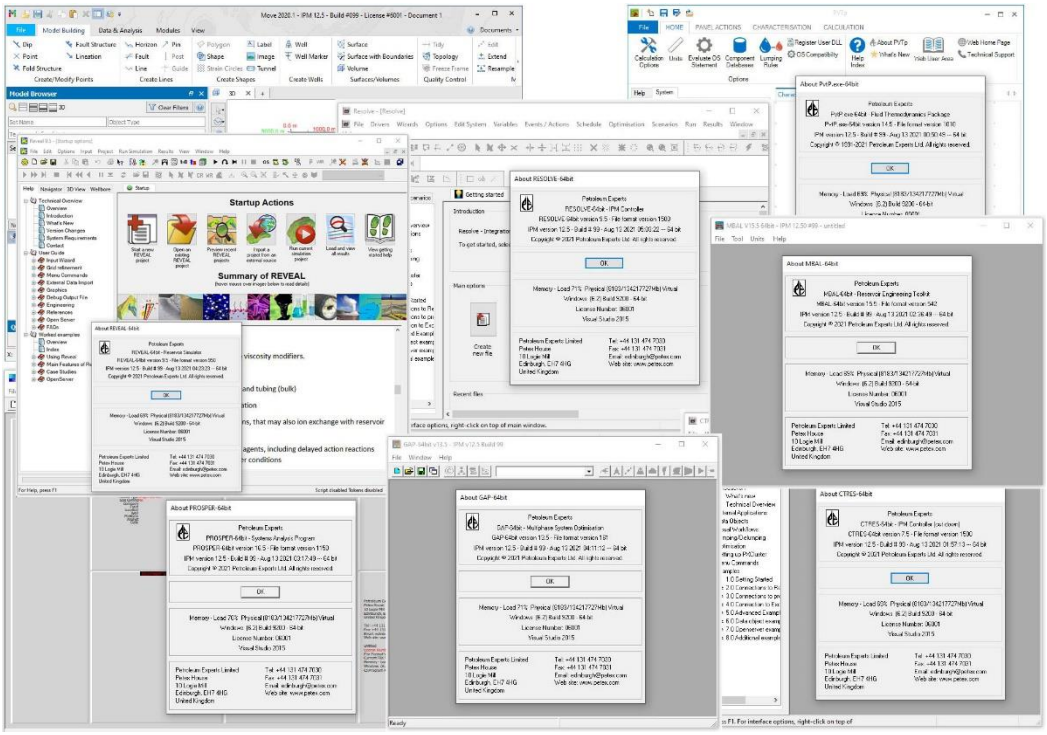

***Interactive Petrophysics (IP) Software***




**Eclipse Software**



## PIPESIM



## PETEX IPM Suite

PRODUCT OVERVIEW

IMEX

# THREE-PHASE, BLACK-OIL RESERVOIR SIMULATOR

IMEX™, one of the world's fastest conventional black oil reservoir simulators, is used to obtain history-matches and forecasts of primary, secondary and enhanced or improved oil recovery processes. In addition, IMEX models complex, heterogeneous, faulted oil and gas reservoirs, using millions of grid blocks, to achieve the most reliable predictions and forecasts. Use IMEX for screening prospects, setting up pilot designs, monitoring and optimizing field operations and improving production performance.

IMEX is used extensively for modelling:

- **Conventional Black Oil Reservoirs** (naturally and hydraulically fractured reservoirs)
- **Unconventional Oil and Gas Reservoirs** (naturally and hydraulically fractured reservoirs, shale oil, shale gas and tight oil and gas, gas condensate/volatile oil)
- **Improved Oil Recovery**
- **Surface Network Modelling**

Regardless of the size or the complexity of the reservoir, IMEX is an effective tool for a broad range of reservoir management issues.

## BENEFITS

- Achieve simulation results faster than any other black oil simulator
- Ability to quickly screen a variety of recovery mechanisms before moving to more complex simulations
- Accurate modelling of the matrix-fracture transfer in fractured reservoirs
- Use the speed of IMEX to model shale gas adsorption effects
- Fast and easy transition to EOR process modelling in GEM™ and STARS™
- Seamlessly interfaces with CMOST™ to facilitate rapid history matching and optimization of reservoir management workflows

## CONVENTIONAL RESERVOIRS

IMEX produces the fastest conventional reservoir simulation results in comparison to other simulation software. Users are able to use either the default implicit/explicit method or fully implicit method for faster calculations and to minimize run times without sacrificing accuracy. IMEX models complex, heterogeneous, faulted oil and gas reservoirs, using millions of grid blocks, to achieve the most reliable predictions and forecasts.

As a full-featured three-phase, four-component black oil simulator, IMEX also includes local grid refinement (LGR), comprehensive well management, dual porosity/permeability, flexible grids, advanced wellbore modelling to surface, mixed wettability initialization, gas adsorption and many more.

## UNCONVENTIONAL OIL & GAS RESERVOIRS

Unconventional reservoirs, such as shale gas, shale liquids and tight oil and gas reservoirs typically require long horizontal wells with multi-stage hydraulic fractures. IMEX models naturally or hydraulically fractured reservoirs to accurately model the transient flow behavior allowing engineers to better forecast reservoir production. Detailed hydraulic fracture response under multi-phase non-Darcy flow conditions and the stimulated areas of shale and other tight reservoirs, are all easily analysed.

Use Builder's new workflow to import and interpret data files generated by GOHFER®, a third-party multi-disciplinary, integrated geomechanical fracture simulator. With GOHFER data, Builder is able to create hydraulic fractures using the average heel-to gradient option. Users will achieve better history matching and more accurate forecasting results by using simulated fractures to estimate fracture properties. In addition, users can also import microseismic data into Builder to more precisely model fracture extension and stimulated reservoir volume.

Highly faulted reservoir under primary depletion.

Another important consideration in unconventional reservoirs is gas adsorption. IMEX can model the adsorption effects in shale and Coal Bed Methane (CBM) reservoirs. In North America, more than 90 oil and gas companies have chosen CMG to simulate their unconventional oil and gas reservoirs.

www.cmgl.ca

CMG COMPUTER MODELLING GROUP LTD.

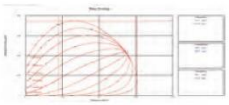
**Three-Phase Black-Oil Reservoir Simulator**

# PROSPER

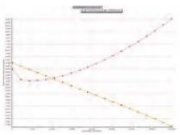
## MULTIPHASE WELL AND PIPELINE NODAL ANALYSIS

WELL AND PIPELINE MODELS

FULLY COMPOSITIONAL

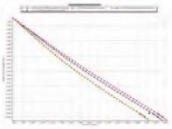


INFLOW/OUTFLOW RESPONSE



STEAM WELLS

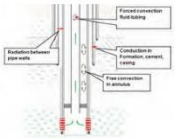
OUTFLOW (VLPs) MODELS



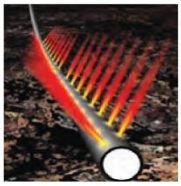
FLOW ASSURANCE

ARTIFICAL LIFT SYSTEMS

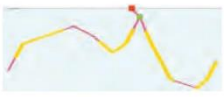
THERMAL MODELLING



PERFORATION DESIGN AND PERFORMANCE



MULTILATERAL COMPLETIONS



INFLOW (IPRs) MODELS

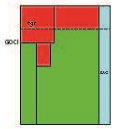
PETROLEUM ENGINEERING SOFTWARE IPM SUITE

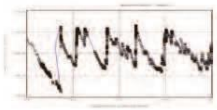
# MBAL

## ANALYTICAL RESERVOIR ENGINEERING TOOLKIT

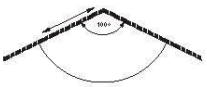
HISTORY MATCHING

MATERIAL BALANCE

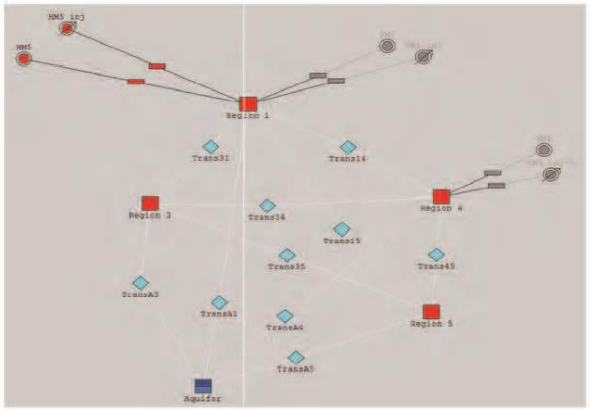




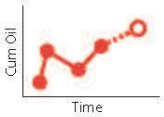
AQUIFER MODELLING



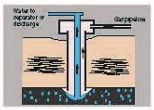
STREAMLINES



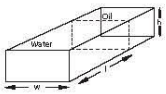
FORECASTS




COAL BED METHANE

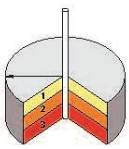


1D MODEL



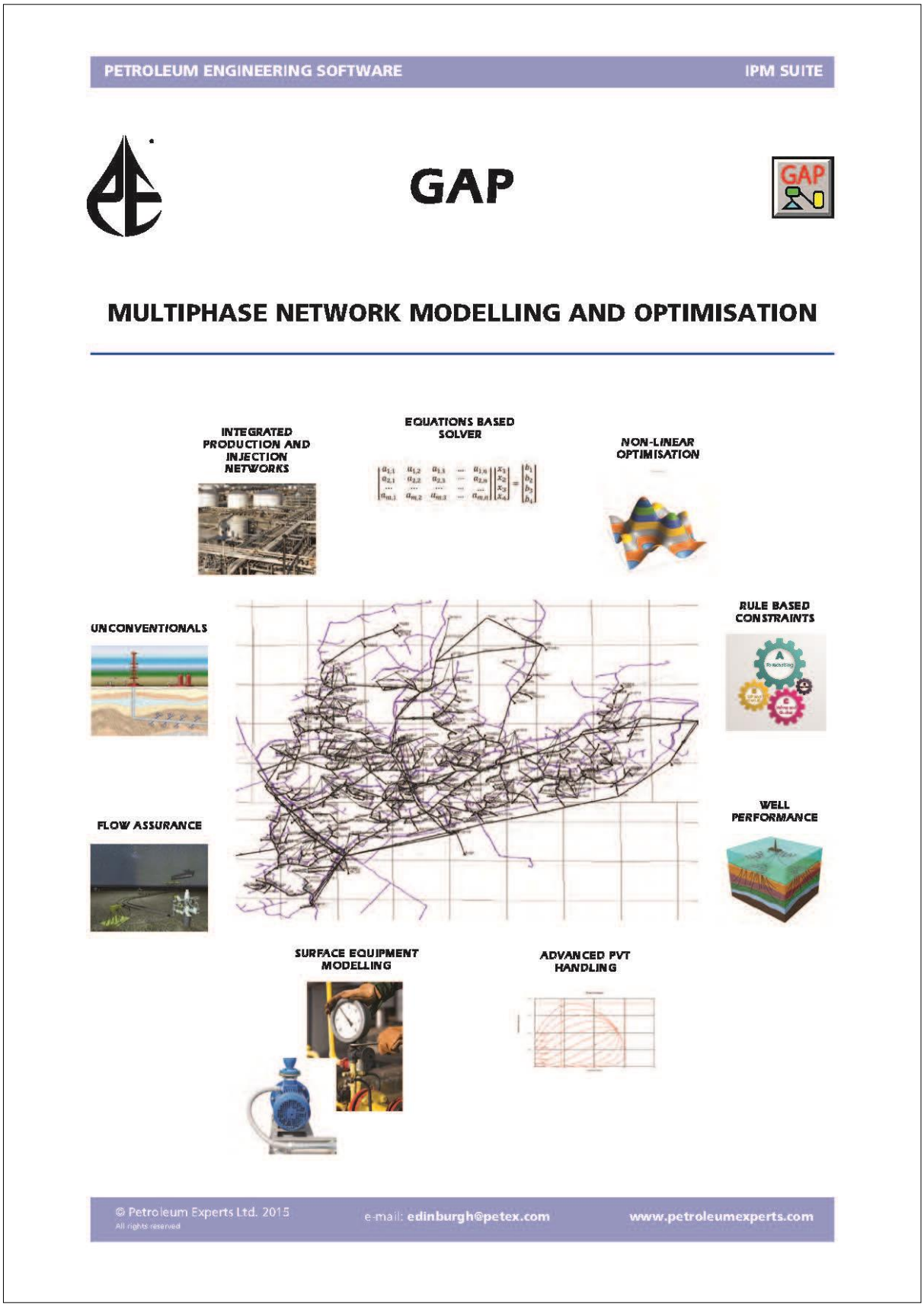

TIGHT RESERVOIRS

MULTILAYER PRODUCTION






e-mail: edinburgh@petex.com www.petroleumexperts.com




**Course Coordinator**
Reem Dergham, Tel: +974 4423 1327, Email: reem@haward.org