OIL & GAS PROFESSIONAL TRAINING COURSE CATALOGUE

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OUR OBJECTIVES

NEW COURSES, TAILORED TO CLIENT’S REQUESTS, CAN BE DESIGNED AND DELIVERED

OUR COURSES ENCOMPASS ALL OIL & GAS SECTORS (UPSTREAM-MIDSTREAM-DOWNSTREAM)
TRAINING PHASES & APPROACHES

- Virtual Training
- Training Equipment Supply
- Managerial Seminars
- Courses Design & Development
- Courses Coordination & Delivery
- Classroom Training
- On the Job Training
### 1. Reservoir Engineering Fundamentals

**Purpose:**
To provide an overview of reservoir engineering concepts as commonly adopted for fields development and production.

**Course Contents:**
- Introduction to Reservoir Engineering Workflow
- Properties and Behaviour of Reservoir Fluids
- Petrophysics: Properties of the Rock Fluid Systems
- Reservoir Drive Mechanisms
- Overview of Well Testing Analysis, Reservoir Modeling and Simulation
- OHIP Evaluation Methods

### 2. Drilling and Completion Engineering Fundamentals

**Purpose:**
To give a comprehensive introductory overview of drilling and completion operations. It will present all relevant procedures, tools and techniques to drill and complete a well in safe and efficient way.

**Course Contents:**
- Introduction to drilling
- Drilling Rigs and Equipment
- Drill String and Casing
- Directional Drilling Techniques
- Well Control: Fundamentals and Methods
- Well Completion: Equipment and Procedures
- Well Intervention: Workover, Wireline and Coiled Tubing Technologies
## 3. PRODUCTION ENGINEERING FUNDAMENTALS

### Purpose:
To provide understanding of oil and gas field production techniques, and knowledge of technology and operating principles of surface production facilities equipment.

### Course Contents:
- Oil and Gas Production and Processing Overview
- Wellhead and Equipment
- Gathering Systems
- Gas Treatments and Conditioning
- Oil Treatments and Conditioning
- Oil Storage, Metering and Dispatching
- Production Plant Utilities

## 4. WELL LOGGING & SURFACE LOGGING

### Purpose:
To provide understanding of basic concepts and methodology of well logging acquisition and interpretation, physics of log measurements, log quality control, basic log interpretation to identify and characterize reservoir. To give attendants knowledge of the Surface Logging services as a fundamental support for geological evaluation, drilling optimization, safety and performance.

### Course Contents:
- Formation Evaluation and Well Logging
- The Main Reservoir Petrophysical and Fluid Properties
- Open Hole Logs: Litho-Logs, Resistivity Logs, Porosity Logs, Image Logs
- Interpretation and Analysis of Well Logs
- Fundamentals of Cased Hole and Production Logging
- Introduction to Surface Logging (SL) Services and Objectives
- SL Data Acquisition System & Equipment
- Gas Data Acquisition
- SL Data Visualization, Reporting & Data Interpretation New Technologies
### 5. RESERVOIR MANAGEMENT

**Purpose:** To provide understanding of the reservoir management process and techniques used by asset management teams throughout its lifetime, from the discovery of a reservoir till the end of production.

<table>
<thead>
<tr>
<th>Course Contents</th>
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<tbody>
<tr>
<td>• Introduction to the process of Reservoir Management</td>
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<tr>
<td>• Reservoir Data Acquisition and Analysis</td>
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<td>• Reservoir Characterization</td>
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<td>• Production Data Analysis</td>
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<td>• Integrated Reservoir Modelling</td>
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<td>• Reservoir Monitoring</td>
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<td>• Reservoir Management Economics</td>
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### 6. ADVANCED DRILLING TECHNOLOGIES

**Purpose:** To provide a complete understanding of the technology used to drill wells. Equipment and procedures involved with drilling are described to cover all the aspects of drilling process.

<table>
<thead>
<tr>
<th>Course Contents</th>
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<tbody>
<tr>
<td>• Introduction to Rotary Drilling</td>
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<tr>
<td>• Well Planning</td>
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<tr>
<td>• Drilling Rigs</td>
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<tr>
<td>• Drilling Equipment and Tools: Rig Systems &amp; Equipment, Drilling String</td>
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<tr>
<td>• Drilling Fluids: Types and Uses Casing Design, Casing Job and Cementing Operations</td>
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<tr>
<td>• Well Control: Equipment, Methods and Procedures</td>
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<tr>
<td>• Directional Drilling Technologies and Deviation Control</td>
</tr>
<tr>
<td>• Hole Problems: Stuck Pipe, Hole Cleaning - Issues and Solutions</td>
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</tbody>
</table>
## 7. ADVANCED WELL COMPLETION

| Purpose: | To provide understanding of well completion procedures and operations. It is designed to develop a high level of competence in the subject by giving detailed description of completion strategy, equipment selection, completion design, and applicability of sand control. |
| Course Contents: | • Well Completion Design and Mode Selection  
• Preliminary Well Completion Operations  
• Completion Equipment: Selection and Types  
• Well Completion Procedures  
• Perforating Operations: Procedures and Operation  
• Gravel Packing: Procedures and Operation |

## 8. WELL INTERVENTION

| Purpose: | To focus on the practical aspects of workover, wireline and coiled tubing technologies. It will give participants the opportunity to gain detailed knowledge of the main applications equipment and procedures relative to each technology. |
| Course Contents: | • Workover operations: Planning a Well Workover  
  • Types of Workover  
  • Phases of a Well Workover and Procedures  
• Wireline operations: Planning Wireline Operations  
  • Wireline Equipment and Tools, Procedures and Operations  
• Coiled Tubing Operations: Planning Coiled Tubing Operations  
  • Equipment, applications and procedures of coiled tubing technology |
## 9. OIL & GAS PRODUCTION OPERATIONS

**Purpose:**
To provide a comprehensive overview of oil and gas field production and processing technology. It will give the participants the understanding of equipment and surface facilities necessary to treat and deliver oil and gas to specification.

**Course Contents:**
- Oil and Gas Gathering Systems
- Gas-Liquid Separation
- Oil-Water Separation
- Oil Treating: Desalting, Stabilization and Sweetening
- Oil Storage and Vapour Recovery
- Gas Treating: Dehydration, Sweetening, Condensate Removal
- Sand, Wax, Asphaltenes, and Scale
- Pipeline Transportation of Crude Oil and Natural Gas
- Pumps, Compressors
- Produced Water Treatment and Disposal
- Production Plant Utilities Production Operation Monitoring

## 10. WELL TESTING

**Purpose:**
To provide application of well test theory to design, perform and interpret pressure transient tests.

**Course Contents:**
- Introduction to Well Testing
- Field Data and Quality Control
- Well Test Design
- Well Test Equipment and Downhole Gauges
- Types of Well Tests
- Flow Conditions and Flow Diffusivity Equation
- Well Deliverability
- Drawdown and Build Up Well Tests
- Early, Middle Time Models and Late Time Schedule
## 11. PRODUCTION OPTIMIZATION

**Purpose:** To provide understanding of key factors affecting the oil and gas production sites, and to show the methods and tools designed to maximize productivity.

**Course Contents:**
- Petroleum Production Systems
- Oil and Gas Well Performance Analysis
- Production Network
- Nodal System Analysis
- Reservoir, Well and Production Problems: Diagnosis and Solutions

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## 12. MAINTENANCE MANAGEMENT

**Purpose:** To provide instructional activities and experience related to maintenance planning: typology and various job applications, handling of maintenance requests and work permits through CMMS.

**Course Contents:**
- Maintenance Scheduling and organization
- CMMS
- Type of Maintenance
- Maintenance Procedures
- Reliability Analysis, Work Analysis and Reporting
- Budget Formulation
- Spare Parts Management & Procurement
- Work Request & Permits
### 13. MECHANICAL MAINTENANCE

**Purpose:** To provide the fundamentals of maintenance techniques of mechanical equipment commonly used for the production and the storage of products respecting the industry safety regulations.

**Course Contents:**
- Introduction to Maintenance and Maintenance Engineering
- Static Equipment: Pressure Vessels, Heat Exchangers
- Types of Valves and Actuators
- Rotating Equipment: Pumps and Compressors
- Gas and Diesel Engines: Characteristics, Functioning and Relative Auxiliary Systems

### 14. ELECTRICAL MAINTENANCE

**Purpose:** To provide understanding of functions of the electrical equipment in oil and gas facilities, maintenance of installed electrical equipment, electrical protection, and electrical safety.

**Course Contents:**
- Electrical Components
- Electrical Systems and Panels
- Batteries
- Chargers
- Transformers
- Electrical Dangers
- ATEX
## 15. PROCESS INSTRUMENTATION CONTROL

**Purpose:** To provide the participants with overall process controls knowledge they need to better understand the function of automated control loops. Aspects of process control (measurement devices, controllers, final control elements, and fundamental control methods) are covered.

<table>
<thead>
<tr>
<th>Course Contents:</th>
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<tbody>
<tr>
<td>• Pressure Measures and Measurement Instruments</td>
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<td>• Temperature Measures and Measurement Instruments</td>
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<td>• Flow Measures and Measurement Instruments</td>
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<td>• Level Measures and Measurement Instruments</td>
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<tr>
<td>• Automatic Control</td>
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<tr>
<td>• Transmitters, Receivers, Controllers and Transducers</td>
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<tr>
<td>• Fire and Gas Detection</td>
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<td>• Blocking and Alarm Systems</td>
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<td>• Architecture of a Process Control System</td>
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## 16. CORROSION CONTROL AND MANAGEMENT

**Purpose:** To explain the main causes of corrosion in oil and gas facilities, and the monitoring and mitigation methods. The course will allow participants to learn about approaches to material selection, cathodic protection, corrosion inhibition.

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<th>Course Contents:</th>
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<tbody>
<tr>
<td>• Introduction to Corrosion and Materials</td>
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<td>• Corrosion Mechanism</td>
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<td>• Forms of Corrosion</td>
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<tr>
<td>• Corrosion Prevention</td>
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<tr>
<td>• Cathodic Protection</td>
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<tr>
<td>• Measurement, Maintenance and Control</td>
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</table>
### 17. ADVANCED SEISMIC INTERPRETATION

**Purpose:** Using this course, participants will be able to learn and understand the principles of seismic data, its interpretation and implication on field scales in explicit details.

**Course Contents:**
- Seismic interpretation and its techniques: geological controls on the propagation, reflection, and refraction of seismic waves.
- Data acquisition and processing with emphasis on its potential impact on interpretation. 2D and 3D interpretation techniques.
- Seismic interpretation of different structural styles: extensional, compressional, strike-slip, inverted, salt, and gravity dominated basins.
- Advanced seismic sequence stratigraphy and seismic facies analysis.
- DHI’s.

### 18. INTRODUCTION TO SEISMIC STRATIGRAPHY

**Purpose:** This course will introduce seismic stratigraphy and its principles and its implications in the industry.

**Course Contents:**
- Chronostratigraphic construction and interpretation. Sea level curves, accommodation space, and cycle orders.
- Vail sequence theory and sequence hierarchy. Siliciclastic sequences.
- Seismic facies. Paleo-environmental analysis.
- Geo-history reconstruction.
### 19. PRACTICAL SEISMIC ATTRIBUTES AND IMPLICATIONS

**Purpose:**
This course will introduce seismic attributes and its uses in the industry. The course content will cover the most common seismic attributes, discuss the theory, attribute management and visualization.

**Course Contents:**
- Seismic attributes. Surface, colour and visualization of attributes.
- Fault interpretation, edge detection and edge enhancement.
- Stratigraphic interpretation. Channel interpretation.
- Textural attributes. Attributes of fracture interpretation.
- Direct hydrocarbon indicators (DHI).
- Volume attributes.

### 20. SEQUENCE STRATIGRAPHY FOR CONVENTIONAL RESERVOIRS

**Purpose:**
Sequence stratigraphy, based on sedimentary response to changes in relative sea level giving the explorationist and the development geoscientist, a powerful new predictive tool for regional basin analysis. Shelf to basin correlation, and reservoir heterogeneity.

**Course Contents:**
- Sequence stratigraphic geometries, unconformities and relative sea level eustasies.
- Para-sequences, their stacking patterns and the use of para-sequences as a correlation tool, relating to stratigraphic patterns and the changes in subsidence rates.
- The sequence stratigraphic model.
- LST sequence boundaries, incised valleys, slope fans, basin floor fans, and prograding complexes.
- TST incised valley fill, source rock and reservoir seal.
- HST alluvial, deltaic, shoreline complexes and shelf sands.
- Sequence stratigraphy in a mixed clastic/carbonate province.
- Exploration and production scaled case histories and strategies.
## 21. ADVANCED RESERVOIR 3D GEOMODELING

**Purpose:**
This course will provide practical training on the procedures and workflows for building advance 3D geomodeling of hydrocarbon bearing reservoir, using Petrel software platform.

**Course Contents:**
- Geomodeling overview. Conceptual design and workflow.
- Geological modeling project workflow.
- Geophysical data interpretation and integration.
- Reservoir framework.
- Property modeling. Rock types and flow zones.
- Reserve volumetrics and uncertainty.
- Upscaling models for reservoir simulation.

## 22. FUNDAMENTALS OF SEISMIC INTERPRETATION

**Purpose:**
Using this course, participants will be able to learn and understand the core principles of seismic data, its interpretation and implication on field scales.

**Course Contents:**
- Basics of seismic interpretation: geological controls on the propagation, reflection, and refraction of seismic waves.
- Data acquisition and processing with emphasis on its potential impact on interpretation.
- 2D and 3D interpretation techniques. Seismic interpretation of different structural styles: extensional, compressional, strike-slip, inverted, salt, and gravity dominated basins.
- DHI’s.
### 23. GEOBODY MODELING IN SUBSURFACE RESERVOIRS

<table>
<thead>
<tr>
<th>Purpose:</th>
<th>Geobody or channels within reservoirs are one of the key challenges to accurate interpret seismic data. This course is specially designed to give a clear understanding of channel bodies, their nature, paleo-environmental setup, geometries and volumes within reservoirs.</th>
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</table>
| Course Contents: | • Geobody Modeling.  
• Channel systems. Channel geometry, shape, size and volumes.  
• Techniques for channel detection in seismic interpretation.  
• Calibration of channels using historical dataset and prior interpretations.  
• Geobody modeling techniques. |

### 24. INTRODUCTION TO GEOLOGY FOR NON-GEOLOGISTS

<table>
<thead>
<tr>
<th>Purpose:</th>
<th>The course will provide a summary of the fundamentals of Geology that require an understanding of the processes of petroleum exploration, development, and production.</th>
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</table>
| Course Contents: | • General Geology.  
• Structural Geology. Clastic and Carbonate Depositional Systems.  
• Geologic mapping and Cross sections.  
• The Petroleum System.  
• Correlation and Stratigraphy.  
• Pore Systems and Diagenesis.  
• Geological Modeling.  
• Unconventional Resources.  
• Seismic Methods.  
• Wellbore Data, Wireline and Core Measurements. |
### 25. ADVANCED TECHNIQUES IN SEISMIC INTERPRETATION

**Purpose:** The objective of this course is to provide E&P professionals with the opportunity to develop practical experience of various Seismic Interpretation techniques using conventional software packages.

**Course Contents:**
- Advanced Seismic interpretation.
- Overview of Mapping and Depth Conversion.
- Seismic Sequence Stratigraphy and Facies Determination.
- Seismic Geomorphology. Seismic Attributes.
- Spectral Decomposition.
- Case Studies.
- Direct Hydrocarbon Indicators.
- Fractured Reservoir Characterization.
- Seismic Inversion.
- Multi Attributes.

### 26. STRUCTURAL GEOLOGY FOR SEISMIC INTERPRETERS

**Purpose:** This course has been designed to familiarize participants with the fundamentals of Structural Geology, as it relates to rock unit geometry and the deformational histories responsible for these structures.

**Course Contents:**
- Fundamental concepts of stress, strain and deformation.
- Ductile deformation (folding).
- Brittle deformation (faulting and fracturing), including domes, unconformities and pinch-outs.
- Salt tectonics.
- Seismic Interpretation of Structures.
- Structural Interpretation of Borehole Images.
- Surface Representation of Structure.
- 3D structural modeling. Global and regional tectonics.
- Tectonic styles, extensional, compressional and lateral.
- Paleo tectonics.
### 27. INTRODUCTION TO SILICICLASTIC RESERVOIRS

**Purpose:**
This course is designed for exploration and development prospectivity of siliciclastic reservoirs across different basin spectrums.

**Course Contents:**
- Depositional systems.
- Basins and its types.
- Stratigraphy and sequence stratigraphy for reservoirs.
- Depositional and Paleo depositional systems.
- Facies models.
- Fluvial and alluvial systems.
- Eolian systems.
- Deltaic systems.
- Shoreface and shelf environmental systems.
- Deepwater systems.
- Conventional wireline and LWD log responses.
- Reservoir prediction on size, shape and geometry of the subsurface deposits.
- Lateral and vertical distribution of the reservoirs.
- Specific Exploration and production case histories.

### 28. MLWD LOGGING FOR LOGGING ENGINEERS

**Purpose:**
This course encompasses well logging basics, principles, logging runs, analysis, data QA/QC and final deliverables.

**Course Contents:**
- MLWD Basics and Well Logging.
- Logging Techniques.
- Logging Runs, tool programming,
- QA/QC log datasets.
- MLWD log analysis.
- On field services.
- Tool maintenance.
- Case studies.
### 29. Exploration & Development of Siliciclastic Reservoirs

**Purpose:**
This course is specially developed for providing a detailed understanding of the exploration and development of potential siliciclastic depositional systems and their associated facies, structure and paleo depositional environment.

**Course Contents:**
- Clastic facies analysis. Depositional Environments.
- Basin types and tectonic settings.
- Processes of sediment generation and supply in different settings: Alluvial, Deltaic, Coastal, Shallow marine.
- Correlation and reservoir modeling.

### 30. Basics of Well-Site Geology

**Purpose:**
On completion of this course, participants will be able to correlate data gathered during drilling, including wellsite geology data, mud logging and petrophysical (wireline/LWD) logs, and their relevance.

**Course Contents:**
- Petroleum geology and its systems.
- Wellsite geology: prospect to well planning, geological services.
- Geological sampling, sample analysis, and well stratigraphy.
- Mud cutting, and core description. Structural geology, fractures, faults, borehole geology.
- Drilling Operations, drilling bits, fluids, casing and cementing.
- Drilling complications, well control and directional drilling.
- Logging operations, acquisition, tools, quick look interpretation and MWD/LWD.
- Well testing and fluids. Reservoir properties, rock and fluid interaction, permeability, averaging, data gathering and interpretation.
- FDP, case histories.
- Reporting, geological, petrophysical and pressure data.
- Exercises, cores, cuttings, quick look, pressures and daily drilling report interpretation.
### 31. INTRODUCTION TO PETROLEUM GEOSCIENCE

**Purpose:** This course introduces the key concepts and principles of geology and petroleum geology in particular current industry practice.

**Course Contents:**
- Introduction to petroleum Geosience.
- Processes and procedures for exploration and development of oil and gas fields.
- Basic understanding of different types of G&G data and their uses.
- Practical applications of the industry knowledge.
- Facilitating technical collaboration between geoscientists and engineers.

### 32. BASICS OF WELL LOG INTERPRETATION

**Purpose:** Basic Log Interpretation blends theory with practical exercises. Participants will work on a data set utilizing a continuous interactive learning process, from lectures on data interpretation techniques and an overview of logging tool principles, to practical exercises where log properties are determined using relevant software.

**Course Contents:**
- Basics of Petrophysics. Well Logging applications.
- Data Quality and Key Well selection. VSh calculation conciliation.
- Porosity determination, water saturation determination and calculation.
- Summaries of petrophysical outputs.
### 33. GROUNDWATER EXPLORATION AND DEVELOPMENT

**Purpose:**
This course provides participants with practical training on the use of electrical, electromagnetic, and passive seismic geophysical methods for groundwater resources exploration.

**Course Contents:**
- Geology and Hydrogeology basics.
- Availability of groundwater data.
- Surface geophysical methods, principles of geo electrical surveying.
- Hydrogeological interpretations, exploration drilling, pumping tests and monitoring.
- Design of groundwater and surface distribution networks.

*Note: Training Course terms and conditions apply.*