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COURSE BROCHURE

# Oil and Gas Exploration and Production Training Course

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Registered in the United Kingdom and Saudi Arabia

# Oil and Gas Exploration and Production Training Course

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Oil and Gas Exploration and Production is a 2-week advanced training course for geoscientists, petroleum engineers and E&P planners who carry a prospect from basin screening to a producing asset, and it ends with a field development concept screening pack. Capital is now committed to fewer, harder prospects, so subsurface and surface choices must hold together from the first seismic line onward. Jupiter Prime Training delivers this integrated view of Oil and Gas Exploration and Production.

## Why Oil and Gas Exploration and Production Matters Now

Three forces shape upstream portfolios today: investors who demand capital discipline and shorter cycle times, maturing fields that need smarter reservoir surveillance, and partners who expect a transparent reserves position before they fund appraisal. An operator that links its geological model, well design and facility concept to a single decision path drills fewer dry holes and sanctions developments that perform as promised. One that keeps each discipline in its own silo books volumes that later slip and builds plants sized for the wrong profile. The course rests on the SPE Petroleum Resources Management System PRMS for classifying resources and reserves.

## Who Gains Most from Oil and Gas Exploration and Production

- Geoscience leads who interpret seismic volumes and rank leads and prospects
- Reservoir engineers who build appraisal plans and production forecasts
- Drilling and well planners who translate targets into well trajectories and casing designs
- Production technologists who manage artificial lift, well performance and decline
- Asset planners who assemble development concepts and investment cases for sanction

Integrated asset teams gain most when a geoscientist, a reservoir engineer and a planner attend together and test one prospect from three angles.

## Oil and Gas Exploration and Production Capabilities

Participants practise moving a single opportunity through every gate of the upstream lifecycle, carrying uncertainty forward rather than resetting it at each hand-over.

- Assess a petroleum system for source, reservoir, seal, trap and timing — exploration licence bidding
- Calculate risked volumes using geological chance of success — prospect ranking committees
- Design an appraisal well plan that narrows the key uncertainty — partner funding approval
- Weigh alternative development concepts against recovery and capital exposure — final investment decision
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Apply PRMS categories to report resources and reserves consistently — reserves auditors and lenders
- Specify production optimisation actions from nodal and decline evidence — asset operating budgets

## Key Oil and Gas Exploration and Production Terms

- Petroleum system — The combination of source rock, migration path, reservoir, seal and trap that allows hydrocarbons to accumulate.
- Geological chance of success — The probability that all petroleum system elements work together to create a discovery at a given prospect.
- Seismic attribute — A measurable property derived from seismic data, such as amplitude, used to infer rock and fluid characteristics.
- Appraisal — Drilling and testing after discovery to reduce uncertainty in volumes and productivity before committing to development.
- Recovery factor — The fraction of hydrocarbons initially in place that can be produced over the life of a field.
- Nodal analysis — A method that matches reservoir inflow with well and pipeline outflow to predict and improve production rates.

## Oil and Gas Exploration and Production Day by Day

## Day 1: The Upstream Lifecycle and Its Gates

- Exploration to Abandonment Lifecycle Map — Where Each Discipline Shapes Value
- Stage-Gate Decision Points — Which Evidence Each Gate Requires
- Licence and Fiscal Terms Overview — How Terms Influence Exploration Appetite
- PRMS Resource Classes — Consistent Language for Volumes Across Partners
- Upstream Portfolio Pressures — Capital Discipline and Cycle Time Expectations

## Day 2: Basin Analysis and Petroleum Systems

- Source Rock Maturity Modelling — Whether Charge Reached the Trap in Time
- Migration Pathway Mapping — Which Structures Sit in the Fill Path
- Reservoir Facies and Depositional Models — Expected Porosity and Connectivity
- Seal Capacity Assessment — Column Height a Trap Can Retain
- Play Fairway Mapping — Where to Focus Acreage and Data Purchase

## Day 3: Seismic Acquisition and Interpretation

- Seismic Survey Geometry Choices — Resolution Versus Acquisition Cost Trade-Off
- Structural Interpretation and Fault Framework — Trap Geometry and Closure Confidence
- Time to Depth Conversion — Uncertainty in Gross Rock Volume
- Amplitude and AVO Attributes — Fluid Indicators That Lift Chance of Success
- Seismic Inversion Products — Reservoir Property Maps for Well Targeting

## Day 4: Prospect Evaluation and Risking

- Probabilistic Volumetrics with Monte Carlo — P90, P50 and P10 Ranges
- Geological Chance of Success Matrix — Consistent Risking Across Prospects
- Dependent Prospect Risking — Shared Charge and Seal Exposure
- Prospect Inventory Ranking — Drill Sequence Within the Exploration Budget
- Expected Monetary Value Screening — Whether a Prospect Earns a Well

## Day 5: Exploration Well Planning

- Pore Pressure and Fracture Gradient Prediction — Safe Mud Weight Window
- Well Trajectory and Target Tolerance — Hitting the Sweet Spot Reliably
- Casing Seat Selection — Well Integrity and Contingency Strings
- Formation Evaluation Plan — Logs, Cores and Pressure Points Required
- Dry Hole and Success Case Cost Estimates — Authorisation for Expenditure

## Day 6: Discovery Appraisal and Reservoir Characterisation

- Well Test Design and Interpretation — Permeability, Skin and Boundaries
- Petrophysical Interpretation Workflow — Net Pay and Hydrocarbon Saturation
- Fluid Sampling and PVT Analysis — Process and Flow Assurance Inputs
- Value of Information Analysis — Whether Another Appraisal Well Pays
- Static Geological Model Building — Volumes in Place With Uncertainty

## Day 7: Reservoir Engineering and Recovery Planning

- Material Balance Methods — Drive Mechanism and Aquifer Support
- Dynamic Reservoir Simulation — Well Count and Plateau Rate Options
- Waterflood and Gas Injection Screening — Secondary Recovery Timing
- Enhanced Oil Recovery Screening Criteria — Tertiary Potential for Mature Fields
- Production Profile Generation — Facility Sizing and Export Capacity

## Day 8: Field Development Concepts

- Onshore, Shallow Water and Subsea Concept Options — Capital and Recovery Balance
- Surface Facility Process Blocks — Separation, Compression and Water Handling
- Phased Development and Early Production Systems — Accelerated First Oil
- Concept Select Decision Matrix — Ranking Options on Value and Risk
- Decommissioning Liability Estimates — Lifecycle Cost Built Into Concepts

## Day 9: Production Operations and Optimisation

- Nodal Analysis of Well Performance — Bottleneck Removal Priorities
- Artificial Lift Selection — Gas Lift, ESP or Rod Pump Choice
- Decline Curve Analysis — Forecast Revisions and Infill Opportunities
- Integrated Production System Modelling — Network Back-Pressure Effects
- Reservoir Surveillance Plan — Which Measurements Trigger Intervention

## Day 10: Practising the Field Development Concept Screening Pack

- Applying Petroleum System and Seismic Evidence — Case Prospect Framing
- Applying Probabilistic Volumes and Chance of Success — Case Volume Range
- Applying Appraisal and Recovery Plans — Case Production Profile
- Applying Concept Select and Optimisation Methods — Preferred Development Option
- Completing the Field Development Concept Screening Pack — Peer Challenge and Sign-Off

## Applying Oil and Gas Exploration and Production After the Course

- Re-risk two prospects in the current inventory with the chance of success matrix and probabilistic volumetrics, then present the revised drill sequence.
- Run a nodal analysis on the three lowest-performing wells and propose an artificial lift or surveillance change for each.

## Oil and Gas Exploration and Production Questions FAQ

### What is Oil and Gas Exploration and Production and why does it matter now?

Oil and Gas Exploration and Production is the chain of work from finding hydrocarbons to producing them. It matters now because investors fund fewer prospects and expect each discovery to reach first oil faster and perform as forecast.

### Which roles gain most from Oil and Gas Exploration and Production training?

Geoscientists, reservoir engineers, well planners, production technologists and asset planners gain most. You benefit most if your decisions depend on inputs from other disciplines.

### How does Oil and Gas Exploration and Production training differ from a petroleum economics course?

This course follows the technical path from basin to producing well. A petroleum economics course concentrates on cash flow models and fiscal terms, while this one supplies the volumes, profiles and concepts those models depend on.

### What do you bring back from Oil and Gas Exploration and Production training?

You bring back a screening pack for one case opportunity, covering risked volumes, an appraisal plan, a production profile and a ranked development concept, plus methods you can reuse on your own prospects and fields.

## Oil and Gas Exploration and Production: The Way Forward

The field development concept screening pack first informs whether an opportunity moves from appraisal into concept select. Asset planners, partners and sanction committees use it to compare options on recovery, capital and risk. After its first use, revisit the chance of success assumptions and the production profile as new well and test data arrive, since both shape every later gate.