ECONOMICS OF OIL AND GAS PRODUCTION



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Introduction

Economics of Oil and Gas Production Training Course builds the economic and fiscal capability that petroleum engineers, economists, and planning professionals need to judge whether production is worth pursuing. Production decisions depend on more than reservoir quality. They depend on fiscal terms, operating cost per barrel, price outlook, and the split of value between operator and host government. Weak analysis there produces projects that look attractive at sanction and disappoint at payout. This course develops the analytical discipline that prevents those outcomes. It covers petroleum fiscal systems, field economics, and cost structures. Furthermore, it applies cash flow modelling, fiscal regime comparison, and portfolio ranking. In addition, it develops risk, sensitivity, and reporting practice. As a result, participants evaluate production economics with confidence.

Economics of Oil and Gas Production Course Objectives

- Explain petroleum fiscal systems and government take mechanisms.
- Apply concession, production sharing, and service contract models.
- Analyse fiscal terms: royalty, tax, and cost recovery limits.
- Build production cash flow models from field data.
- Apply NPV, IRR, and payback analysis to field development.
- Analyse lifting cost, operating cost per barrel, and cost drivers.
- Model production profiles and decline curve behaviour.
- Apply fiscal regime comparison and government take analysis.
- Apply sensitivity, scenario, and risk analysis to field economics.
- Rank and prioritise production projects within capital limits.

Course Methodology

- Interactive lectures with real field economics and fiscal cases.

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- Fiscal modelling and cash flow workshops.
- Production economics and cost analysis exercises.
- Sensitivity, scenario, and portfolio ranking practice.
- Structured peer review with facilitator feedback on economic models.

Who Should Take This Course

- Petroleum economists and planning analysts.
- Reservoir and production engineers.
- Commercial and fiscal professionals in oil and gas.
- Finance analysts supporting field development.
- Government petroleum ministry officials.
- Consultants advising on petroleum economics.

Economics of Oil and Gas Production Course Outlines

Day 1: Petroleum Fiscal Systems and Government Take

- Fiscal system types: concession, production sharing, service contracts.
- Royalty, tax, and cost recovery mechanisms.
- Government take and contractor take analysis.
- Production sharing contract cost oil and profit oil.
- Ring fencing, stability clauses, and fiscal changes.
- Fiscal terms comparison across jurisdictions.
- Case study: comparing government take under two fiscal systems.

Day 2: Production Profiles and Field Performance

- Reservoir drive mechanisms and production behaviour.
- Production forecasting and decline curve analysis.
- Exponential, hyperbolic, and harmonic decline.
- Plateau, decline, and tail production phases.
- Water cut, gas-oil ratio, and well performance indicators.
- Well intervention and enhanced recovery economics.
- Workshop: building a production profile from field data.

Day 3: Cost Structures and Operating Economics

- Capital expenditure categories in field development.
- Operating cost structure and lifting cost per barrel.
- Fixed, variable, and semi-variable production costs.
- Abandonment and decommissioning cost estimation.
- Cost drivers: reservoir depth, location, and infrastructure.
- Cost benchmarking and efficiency analysis.
- Workshop: calculating operating cost and lifting cost per barrel.

Day 4: Cash Flow Modelling and Economic Evaluation

- Cash flow model design and assumption setting.
- Revenue modelling with price differentials and quality adjustments.
- Fiscal calculation: royalty, tax, and cost recovery.
- NPV, IRR, payback, and profitability index application.
- Discount rate selection and hurdle rate policy.
- Incremental and sensitivity analysis.
- Workshop: building a field economic model with fiscal terms.

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Day 5: Risk, Portfolio Ranking, and Reporting

- Price, reserve, and cost uncertainty analysis.
- Scenario modelling and probabilistic methods.
- Risk-adjusted evaluation and decision criteria.
- Project ranking under capital and capacity constraints.
- Portfolio optimisation across fields and assets.
- Economic reporting, justification, and approval packs.
- Course review, assessment, and action planning.

Conclusion

By successfully completing Economics of Oil and Gas Production, participants will gain a thorough understanding of petroleum fiscal systems and government take, production profiles and field performance, cost structures and operating economics, cash flow modelling and economic evaluation, and risk, portfolio ranking and reporting. They will also acquire practical skills in petroleum fiscal system analysis and government take assessment, production forecasting and field performance analysis, production cost analysis and lifting cost calculation, and field economic modelling, risk analysis and portfolio ranking. In addition, the course prepares them to judge production economics with transparent assumptions and defensible conclusions. Gentex Training Center delivers this programme with a strong focus on applied petroleum economics and decision-ready analysis.

FAQs for Economics of Oil and Gas Production course

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Q1 What is the "Economics of Oil and Gas Production" course about?

It is a five-day programme on judging whether oil and gas production is economically worthwhile. It covers petroleum fiscal systems and government take, production profiles and field performance, cost structures and operating economics, cash flow modelling and economic evaluation, and risk, portfolio ranking and reporting.

Q2 What are the key benefits of the "Economics of Oil and Gas Production" course?

Participants evaluate production projects with stronger economics. The course improves fiscal system understanding and government take analysis, sharpens production forecasting and decline analysis, strengthens lifting cost and operating cost assessment, improves field cash flow modelling and NPV work, and raises risk analysis and portfolio ranking quality.

Q3 What skills will I gain from the "Economics of Oil and Gas Production" course?

Participants gain petroleum fiscal system analysis and government take assessment, production forecasting and field performance analysis, production cost analysis and lifting cost calculation, and field economic modelling, risk analysis and portfolio ranking. These four skills cover the practical core of petroleum production economics.

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Q4 What tools, methods, or standards are covered in the "Economics of Oil and Gas Production" course?

The course covers concession, production sharing and service contract fiscal systems, royalty, tax and cost recovery mechanisms, government take and contractor take calculation, cost oil and profit oil mechanics, ring fencing and stability clauses, fiscal terms comparison, reservoir drive mechanisms, decline curve analysis including exponential, hyperbolic and harmonic decline, plateau, decline and tail production phases, water cut and gas-oil ratio analysis, well intervention and enhanced recovery economics, capital expenditure categories, operating cost structure and lifting cost per barrel, fixed, variable and semi-variable cost analysis, abandonment and decommissioning cost estimation, cost driver analysis, cost benchmarking, cash flow model design, revenue modelling with price differentials, fiscal calculation of royalty and tax, Net Present Value, internal rate of return, payback and profitability index, discount rate and hurdle rate selection, incremental and sensitivity analysis, price, reserve and cost uncertainty analysis, scenario and probabilistic modelling, risk-adjusted evaluation criteria, project ranking under capital constraints, portfolio optimisation, and economic reporting and approval pack preparation.

Q5 How is the "Economics of Oil and Gas Production" course applied in real-world practice?

Participants apply the methods to real and simulated fields. They compare fiscal systems and calculate government take, build production profiles from field data, analyse decline behaviour, compute lifting and operating cost per barrel, estimate abandonment costs, build field cash flow models with fiscal terms, calculate NPV, IRR and payback, test sensitivity to price and cost, run probabilistic scenarios, rank projects under capital limits, and prepare economic justification packs for approval. Many leave with a field economic model template, a fiscal comparison worksheet, and a portfolio ranking framework ready to use.

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