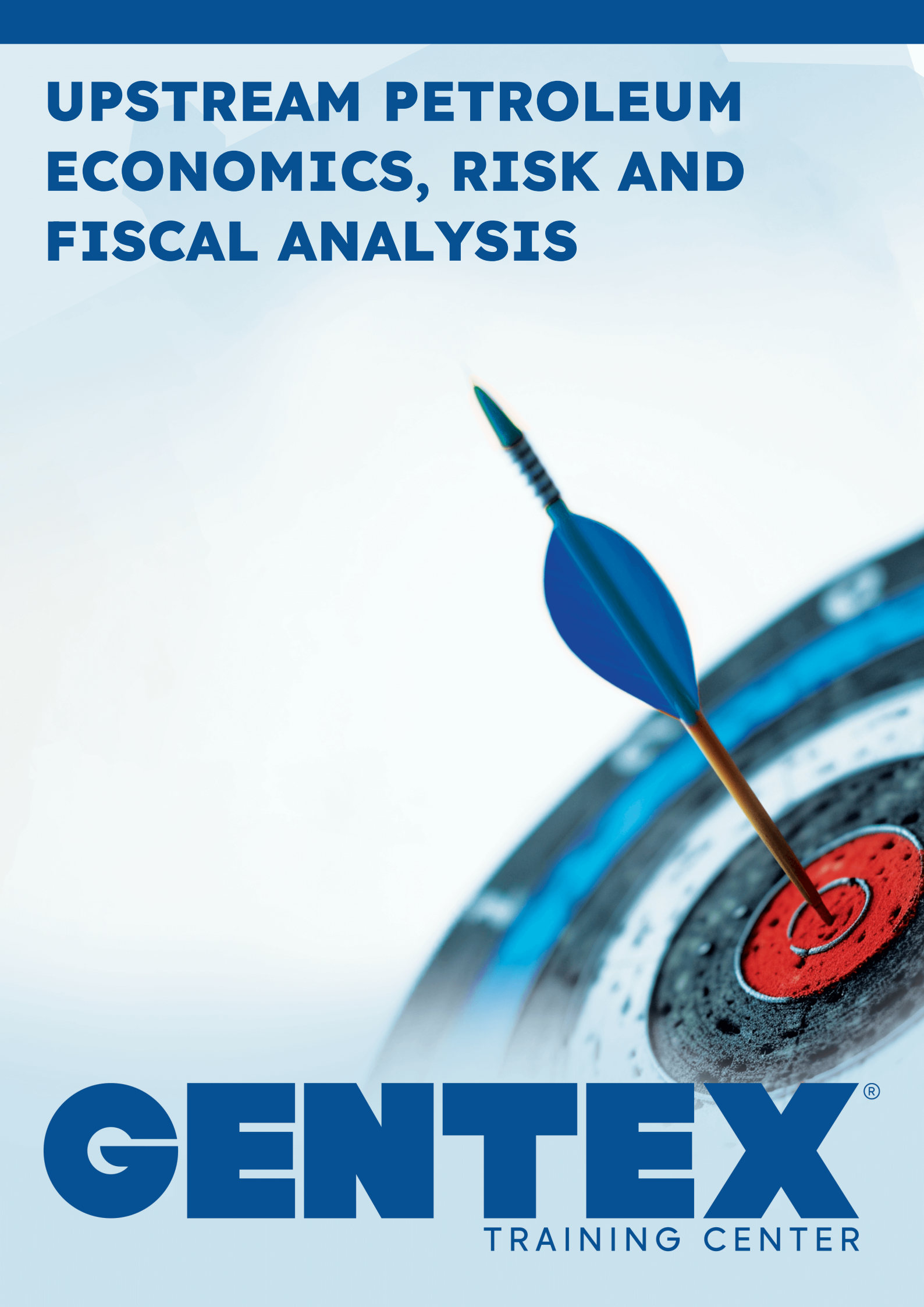
UPSTREAM PETROLEUM ECONOMICS, RISK AND FISCAL ANALYSIS



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Info@gentextraining.com

Introduction

Upstream Petroleum Economics, Risk and Fiscal Analysis Training Course develops the commercial judgement that decides which exploration and production projects go ahead. It connects reserves uncertainty, cost estimates, and price forecasts into a single cash flow model that supports real investment choices. Participants examine fiscal regimes across host countries and measure how contract terms change project value. Furthermore, the programme applies probabilistic methods to quantify geological and commercial risk rather than treating it as intuition. In addition, it covers portfolio selection, capital rationing, and sensitivity testing. As a result, attendees can defend project recommendations with quantified evidence.

Upstream Petroleum Economics, Risk and Fiscal Analysis Course Objectives

- Build full-cycle cash flow models for exploration and production projects.
- Apply discounted cash flow, net present value, and internal rate of return to field decisions.
- Estimate unit technical cost, break-even oil price, and project profitability under price scenarios.
- Classify reserves and resources using the SPE Petroleum Resources Management System (PRMS).
- Quantify geological and commercial risk using expected monetary value and probability of success.
- Perform Monte Carlo simulation and tornado sensitivity analysis on key variables.
- Interpret fiscal regimes including concessions, production sharing contracts, and service agreements.
- Calculate government take, contractor take, and marginal effective tax rate.
- Rank projects and allocate capital across a portfolio under budget constraints.
- Apply decision tree analysis to staged exploration and appraisal programmes.

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Course Methodology

- Hands-on Excel modelling of upstream cash flows and fiscal terms.
- Probabilistic risk exercises using Monte Carlo simulation and decision trees.
- Case studies comparing projects under different fiscal regimes.
- Group work on portfolio ranking and capital allocation.
- Structured review of price forecasting and market scenarios.

Who Should Take This Course

- Upstream economists and business analysts.
- Petroleum and reservoir engineers entering commercial roles.
- Planning and budgeting staff in oil and gas companies.
- Finance professionals supporting exploration and production assets.
- Business development and new ventures specialists.
- Risk analysts and portfolio managers in energy firms.
- Government energy advisors and regulatory economists.

Upstream Petroleum Economics, Risk and Fiscal Analysis Course Outlines

Day 1: Economic Modelling Foundations

- The upstream project life cycle and decision gates.
- Reserves and resources classification under the SPE PRMS.
- Production profiles, decline curves, and recovery factors.
- Capital and operating expenditure estimation.

- Building a full-cycle cash flow model in Excel.
- Discount rate selection and cost of capital in oil and gas.
- Workshop: constructing a field development cash flow model.

Day 2: Investment Metrics and Profitability

- Net present value, internal rate of return, and payback period.
- Unit technical cost and lifting cost per barrel.
- Break-even oil price and price deck assumptions.
- Profitability index and capital efficiency ratios.
- Sensitivity and scenario analysis on cost, price, and reserves.
- Comparing projects of different size, life, and risk.
- Exercise: ranking four development opportunities.

Day 3: Fiscal Regimes and Government Take

- Concessionary, production sharing, and service contract systems.
- Royalty, tax, and cost recovery mechanisms.
- Cost oil, profit oil, and contractor entitlement.
- Government take versus contractor take analysis.
- Marginal effective tax rate and fiscal neutrality.
- Ring-fencing, carry, and domestic market obligations.
- Workshop: modelling project value under two fiscal terms.

Day 4: Risk Analysis and Probabilistic Methods

- Sources of upstream risk: geological, commercial, and political.
- Expected monetary value and probability of success.

- Decision tree analysis for staged exploration programmes.
- Monte Carlo simulation for reserves and price uncertainty.
- Tornado diagrams for variable sensitivity ranking.
- Value of information and appraisal well decisions.
- Case study: quantifying risk in an exploration prospect.

Day 5: Portfolio Management and Strategic Decisions

- Portfolio ranking methods and capital rationing.
- Risk and reward balance across a project portfolio.
- Optimal working interest and farm-in decisions.
- Deferral, abandonment, and incremental investment choices.
- Hedging and price risk management in unstable markets.
- Performance metrics: finding cost and reserve replacement ratio.
- Capstone: presenting an upstream portfolio recommendation.

Conclusion

By successfully completing Upstream Petroleum Economics, Risk and Fiscal Analysis Training Course, participants will gain a structured command of project economics, fiscal terms, and probabilistic risk evaluation. They will acquire the ability to model field cash flows, quantify uncertainty, compare fiscal regimes, and rank a portfolio of assets. As a result, they can support investment decisions with defensible numbers. Gentex Training Center delivers this programme with a strong focus on applied models and real upstream cases.

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FAQs for the Upstream Petroleum Economics, Risk and Fiscal Analysis course

Q1 What is the "Upstream Petroleum Economics, Risk and Fiscal Analysis" course about?

It covers how exploration and production projects are evaluated commercially, combining cash flow modelling, investment metrics, fiscal regime analysis, and probabilistic risk methods to support field development and portfolio decisions.

Q2 What are the key benefits of the "Upstream Petroleum Economics, Risk and Fiscal Analysis" course?

Participants produce more reliable project valuations, quantify risk instead of estimating it by feel, and compare fiscal terms objectively across host countries. They also improve capital allocation and can defend recommendations to management and partners.

Q3 What skills will I gain from the "Upstream Petroleum Economics, Risk and Fiscal Analysis" course?

Full-cycle upstream cash flow modelling and investment appraisal using net present value and internal rate of return; fiscal regime and government take analysis; probabilistic risk evaluation using expected monetary value and Monte Carlo simulation; and portfolio ranking, capital rationing, and working interest decisions.

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Q4 What tools, methods, or standards are covered in the "Upstream Petroleum Economics, Risk and Fiscal Analysis" course?

The course covers the SPE Petroleum Resources Management System, discounted cash flow, net present value, internal rate of return, payback period, unit technical cost, break-even oil price, expected monetary value, probability of success, decision tree analysis, Monte Carlo simulation, tornado diagrams, value of information analysis, production sharing, concession and service contract mechanics, cost oil and profit oil, government take analysis, marginal effective tax rate, and finding cost and reserve replacement ratio metrics.

Q5 How is the "Upstream Petroleum Economics, Risk and Fiscal Analysis" course applied in real-world practice?

Participants build a field development cash flow model, rank four development opportunities, compare project value under two fiscal regimes, quantify risk in an exploration prospect, and present a portfolio recommendation. Each exercise matches the analysis upstream business development and planning teams perform.