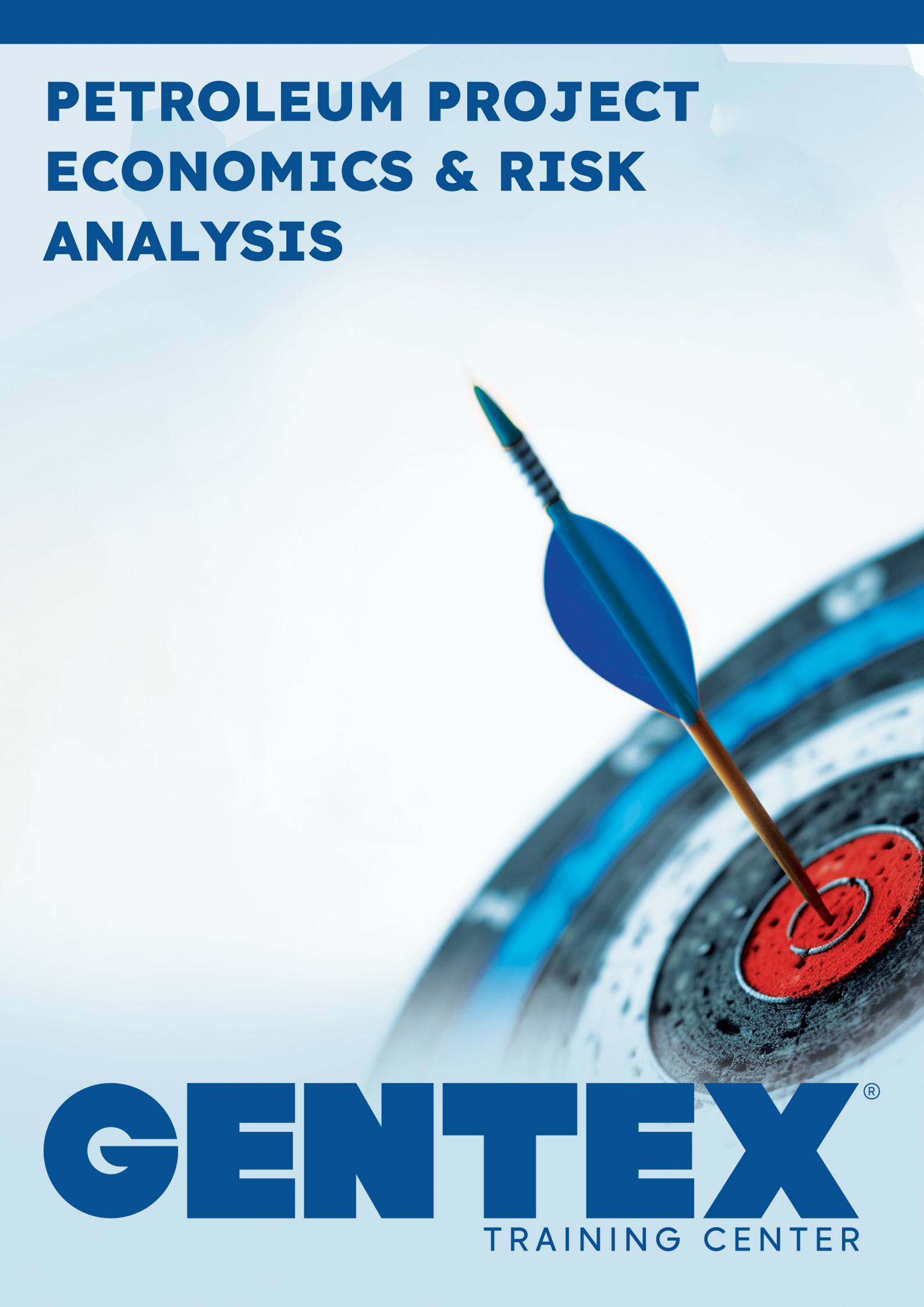
PETROLEUM PROJECT ECONOMICS & RISK ANALYSIS



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GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Introduction

Petroleum Project Economics & Risk Analysis Training Course builds the skills that energy professionals need to appraise petroleum projects and quantify the uncertainty around them. Participants learn how to forecast cash flows, apply fiscal terms and value projects, then test how those values move with price, cost and reserve uncertainty. The programme covers project economics, discounted cash flow valuation, fiscal mechanics, sensitivity analysis, scenario modelling and probabilistic methods including Monte Carlo simulation. Furthermore, it addresses portfolio ranking, real options and decision criteria. As a result, delegates can rank opportunities and defend recommendations under challenge. Gentex Training Center delivers the programme through Excel modelling workshops and appraisal case work.

Petroleum Project Economics & Risk Analysis Course Objectives

- Forecast relevant cash flows for upstream and downstream petroleum projects.
- Apply discounting, cost of capital and hurdle rates to appraisal.
- Calculate net present value, internal rate of return and payback period.
- Apply petroleum fiscal terms including royalty, tax and production sharing.
- Calculate government take, contractor take and effective tax rates.
- Apply sensitivity analysis with one-way and two-way data tables.
- Build scenario models for price, cost, volume and timing changes.
- Apply Monte Carlo simulation for probabilistic project outcomes.
- Use decision criteria, expected value and risk-adjusted measures.
- Rank a project portfolio and present recommendations to committees.

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Course Methodology

The course combines technical briefings with hands-on Excel modelling workshops and appraisal case studies. Participants build a project valuation model, run sensitivity and Monte Carlo analysis and prepare a recommendation paper. In addition, structured peer review and group debate sharpen commercial judgement, and each day closes with an applied modelling task.

Who Should Take This Course

- Petroleum economists and project evaluation analysts.
- Finance and planning professionals in oil and gas companies.
- Reservoir, petroleum and development engineers in commercial roles.
- Investment analysts, bankers and advisers covering energy assets.
- Joint venture and production sharing accountants.
- Project managers and commercial staff preparing business cases.

Petroleum Project Economics & Risk Analysis Course Outlines

Day 1: Project Economics Foundations and Cash Flow

- Project life cycle and the economics of each stage.
- Relevant cash flows, sunk costs and incremental analysis.
- Production profiles, decline curves and plateau assumptions.
- Capital expenditure phasing and operating cost structures.
- Inflation, escalation and nominal versus real cash flows.

- Discounting principles and the cost of capital.
- Workshop: building a petroleum project cash flow forecast in Excel.

Day 2: Valuation Metrics and Fiscal Mechanics

- Net present value and its interpretation in project decisions.
- Internal rate of return using IRR and XIRR functions.
- Payback period, discounted payback and profitability index.
- Royalty, cost recovery ceilings and profit oil split mechanics.
- Petroleum income tax, additional profits taxes and ring-fencing.
- Government take, contractor take and effective tax rate calculation.
- Workshop: valuing a project and calculating government take.

Day 3: Sensitivity and Scenario Analysis

- Identifying key value drivers: price, grade, cost and timing.
- One-way and two-way sensitivity data tables in Excel.
- Tornado charts and spider diagrams for driver ranking.
- Break-even analysis for price, cost and volume.
- Scenario construction for price, fiscal term and cost changes.
- Handling project deferral and phased development options.
- Workshop: building sensitivity and scenario analysis for a project.

Day 4: Probabilistic Risk Analysis and Decision Criteria

- Probability distributions for reserves, price and cost inputs.
- Monte Carlo simulation using RISK or Excel add-ins.
- Interpreting probabilistic outputs and confidence intervals.

- Expected value, expected monetary value and risked outcomes.
- Real options thinking for staged, deferrable and expandable projects.
- Decision trees and their application to petroleum projects.
- Workshop: running a Monte Carlo simulation on a project model.

Day 5: Portfolio Ranking and Decision Communication

- Capital rationing and prioritisation across a project portfolio.
- Ranking projects using risk-adjusted decision criteria.
- Portfolio risk, diversification and correlation across assets.
- Preparing an investment memorandum and decision paper.
- Presenting results and defending assumptions under challenge.
- Post-investment review and learning from outcomes.
- Workshop: presenting project economics and risk analysis before a review panel.

Conclusion

By successfully completing Petroleum Project Economics & Risk Analysis Training Course, participants will have acquired the knowledge to appraise petroleum projects and quantify the risk around them. They will understand cash flow forecasting, valuation metrics, fiscal mechanics, sensitivity and probabilistic analysis, and portfolio ranking, and they will know how to present recommendations that survive committee scrutiny. As a result, delegates support stronger capital allocation in energy businesses. Gentex Training Center builds the programme around current appraisal practice.

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FAQs for the Petroleum Project Economics & Risk Analysis course

Q1 What is the "Petroleum Project Economics & Risk Analysis" course about?

It teaches how petroleum projects are valued and how their risks are quantified. You learn cash flow forecasting, NPV and IRR appraisal, fiscal mechanics, sensitivity and scenario analysis, Monte Carlo simulation and portfolio ranking, with practical Excel modelling.

Q2 What are the key benefits of the "Petroleum Project Economics & Risk Analysis" course?

You gain the ability to appraise projects on evidence and to show how value responds to price, cost and reserve uncertainty. You also improve fiscal modelling accuracy, rank competing opportunities consistently, strengthen committee papers, and reduce the chance of approving projects on optimistic numbers.

Q3 What skills will I gain from the "Petroleum Project Economics & Risk Analysis" course?

You will gain petroleum project cash flow forecasting, discounted cash flow valuation and fiscal modelling, sensitivity, scenario and probabilistic risk analysis, and portfolio ranking and investment decision reporting.

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Q4 What tools, methods, or standards are covered in the "Petroleum Project Economics & Risk Analysis" course?

The course covers net present value, internal rate of return using IRR and XIRR, payback and profitability index, royalty and cost recovery ceilings, profit oil split, petroleum income tax and additional profits taxes with ring-fencing, government take and effective tax rate calculation, one-way and two-way sensitivity data tables, tornado charts, break-even analysis, Monte Carlo simulation using RISK, expected monetary value, decision trees and real options analysis.

Q5 How is the "Petroleum Project Economics & Risk Analysis" course applied in real-world practice?

Graduates apply it to prepare business cases for field development, appraise incremental projects and workovers, model fiscal terms and government take, test project value against price and cost scenarios, run probabilistic risk analysis on reserves and costs, rank portfolios under budget constraints, and present recommendations to investment committees and partners.