THE 10-DAY ADVANCED FINANCIAL MODELLING & PETROLEUM PROJECT ECONOMICS



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TRAINING CENTER

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Info@gentextraining.com

Introduction

The 10-Day Advanced Financial Modelling & Petroleum Project Economics Training Course develops the modelling depth that oil and gas analysts need for high-stakes investment decisions. Participants work from model architecture through to advanced valuation, fiscal modelling and probabilistic analysis across an extended programme. The coverage includes three-statement integration, production and decline modelling, petroleum fiscal regimes, portfolio optimisation, real options and Monte Carlo simulation. Furthermore, it addresses model audit, governance and presentation to investment committees. As a result, delegates can build, stress-test and defend complex petroleum models. Gentex Training Center delivers the programme through extended Excel workshops and live project case work.

The 10-Day Advanced Financial Modelling & Petroleum Project Economics Course Objectives

- Build advanced, auditable financial models in Microsoft Excel.
- Integrate profit and loss, balance sheet and cash flow statements.
- Model production profiles, decline curves and field development plans.
- Construct petroleum fiscal models covering royalty, tax and production sharing.
- Apply discounted cash flow, NPV, IRR, MIRR and XIRR to petroleum assets.
- Size debt and model financing structures for upstream projects.
- Apply Monte Carlo simulation and probabilistic reserves analysis.
- Use real options analysis for staged development decisions.
- Optimise a portfolio of assets under capital constraints.
- Audit models, document assumptions and present to investment committees.

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Course Methodology

The programme combines technical briefings with extended hands-on Excel workshops and live petroleum project case studies. Participants build a full integrated model, run fiscal and probabilistic analysis, and present findings to a simulated investment committee. In addition, structured peer review, model audit exercises and committee simulation sharpen judgement, and each day closes with an applied modelling task.

Who Should Take This Course

- Financial analysts and modelling specialists in oil and gas.
- Petroleum, reservoir and development engineers involved in economics.
- Business development, planning and commercial teams in energy.
- Corporate finance, treasury and structured finance professionals.
- Accountants, controllers and auditors working with petroleum assets.
- Consultants, advisers and bankers covering the energy sector.

The 10-Day Advanced Financial Modelling & Petroleum Project Economics Course Outlines

Day 1: Advanced Model Architecture and Design

- Model purpose, scope and decision-support requirements.
- Modular architecture: inputs, calculations, outputs and navigation.
- Spreadsheet standards: colour coding, units, naming and version control.
- Error checks, formula auditing and circular reference handling.
- Scenario switches, dropdown controls and index functions.

- Documentation, assumption registers and model handover.
- Workshop: designing a modular petroleum model template.

Day 2: Production Profiles and Field Development Modelling

- Reservoir fundamentals for the non-specialist modeller.
- Decline curve analysis and production forecasting.
- Plateau profiles, ramp-up and field development phasing.
- Infill drilling, workovers and incremental production.
- Facility capacity constraints and deferment modelling.
- Abandonment timing and end-of-field-life assumptions.
- Workshop: building a production profile and deferment model.

Day 3: Three-Statement Integration and Financial Statements

- Integrating profit and loss, balance sheet and cash flow.
- Working capital, depreciation, depletion and amortisation.
- Debt schedules, interest calculations and covenant modelling.
- Decommissioning provisions and asset retirement obligations.
- Balancing checks and reconciliation error diagnosis.
- Financial statement output and reporting schedules.
- Workshop: building an integrated three-statement oil and gas model.

Day 4: Petroleum Fiscal Regimes

- Concessionary and production sharing contract structures.
- Royalty, cost oil, profit oil and contractor entitlement mechanics.
- Ring-fencing, carry forward of losses and fiscal consolidation.
- Government take, contractor take and progressivity analysis.
- Tax, supplementary charge and special petroleum taxes.
- Marginal field economics and fiscal term comparison.
- Workshop: modelling a production sharing contract.

Day 5: Advanced Valuation and Investment Metrics

- Discounted cash flow valuation with NPV, IRR, MIRR and XIRR.
- Real versus nominal terms, escalation and inflation treatment.
- Mid-year convention and discounting timing conventions.
- Hurdle rates, WACC and risk-adjusted discount rates.
- Unit technical cost, break-even price and reserve valuation metrics.
- Ranking metrics under capital rationing.
- Workshop: valuing an upstream asset and calculating break-even prices.

Day 6: Debt Structuring and Financing Models

- Reserve-based lending and borrowing base mechanics.
- Debt sizing using debt service coverage ratio and gearing tests.
- Amortisation, sculpted repayment and cash sweep mechanics.
- Reserve accounts, distribution lock-up and covenant testing.
- Interest rate and commodity price hedging structures.
- Refinancing, acquisition financing and farm-out arrangements.
- Workshop: sizing debt and testing covenant headroom.

Day 7: Probabilistic Analysis and Monte Carlo Simulation

- Uncertainty in reserves, price, cost and schedule.
- Distributions, correlations and dependency modelling.
- Monte Carlo simulation for value and production outcomes.
- Probability of economic success and confidence intervals.
- Reserves categorisation under the PRMS framework.
- Tornado and sensitivity analysis for key value drivers.
- Workshop: running Monte Carlo simulation on a petroleum model.

Day 8: Real Options, Staged Development and Decision Analysis

- Limitations of discounted cash flow in uncertain settings.
- Real options: deferral, expansion, contraction and abandonment.
- Decision trees and expected monetary value analysis.
- Exploration and appraisal staged decision frameworks.
- Option valuation approaches and binomial trees.
- Decision quality and behavioural bias in capital decisions.
- Workshop: applying real options and decision tree analysis.

Day 9: Portfolio Optimisation and Capital Allocation

- Portfolio construction across assets, geographies and risk profiles.
- Correlations, diversification and portfolio risk measurement.

- Capital rationing and multi-period allocation models.
- Ranking under technical, fiscal and political risk.
- Strategic fit, optionality and operational capability.
- Post-investment review and benefits realisation.
- Workshop: optimising a portfolio under a capital constraint.

Day 10: Model Audit, Governance and Investment Presentation

- Model audit technique and error tracing methods.
- Spreadsheet risk, governance and control frameworks.
- Reviewing and correcting a model prepared by another analyst.
- Documentation standards and audit-ready evidence packs.
- Investment committee papers and executive dashboards.
- Presenting and defending a petroleum investment case.
- Workshop: presenting a full petroleum model to an investment panel.

Conclusion

By successfully completing The 10-Day Advanced Financial Modelling & Petroleum Project Economics Training Course, participants will have acquired the knowledge to build and defend complex petroleum financial models. They will understand integrated modelling, production and fiscal regime analysis, advanced valuation, debt structuring, probabilistic and real options analysis, portfolio optimisation and model governance, and they will know how to present investment cases to senior decision makers. As a result, delegates support capital decisions on oil and gas assets with confidence. Gentex Training Center builds the programme around current industry and financial practice.

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FAQs for The 10-Day Advanced Financial Modelling & Petroleum Project Economics course

Q1 What is the "The 10-Day Advanced Financial Modelling & Petroleum Project Economics" course about?

It covers advanced modelling for oil and gas investment decisions across ten days. You learn integrated three-statement modelling, production and fiscal regime modelling, advanced valuation, debt structuring, Monte Carlo and real options analysis, portfolio optimisation and model audit.

Q2 What are the key benefits of the "The 10-Day Advanced Financial Modelling & Petroleum Project Economics" course?

You gain the depth to build models for complex petroleum decisions rather than simple appraisals. You also improve fiscal regime modelling accuracy, debt sizing and covenant testing, quantify reserve and price uncertainty probabilistically, optimise capital across a portfolio, and present investment cases that withstand committee challenge.

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Q3 What skills will I gain from the "The 10-Day Advanced Financial Modelling & Petroleum Project Economics" course?

You will gain advanced petroleum financial model design and integrated three-statement modelling, production profile and petroleum fiscal regime modelling, advanced valuation, debt structuring and probabilistic analysis, and real options, portfolio optimisation and model audit capability.

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Q4 What tools, methods, or standards are covered in the "The 10-Day Advanced Financial Modelling & Petroleum Project Economics" course?

The course covers modular model architecture and spreadsheet standards with colour coding, units and version control, Microsoft Excel functions including INDEX, MATCH, XLOOKUP, CHOOSE, OFFSET, SUMIFS and IFERROR, decline curve analysis and production forecasting, plateau and ramp-up modelling, deferment and facility constraint modelling, integrated three-statement construction, depreciation, depletion and amortisation, asset retirement obligation modelling, concessionary and production sharing contract fiscal modelling, royalty, cost oil, profit oil and contractor entitlement calculations, ring-fencing and loss carry forward, government take and progressivity analysis, discounted cash flow valuation with NPV, IRR, MIRR and XIRR, real versus nominal and mid-year convention treatment, WACC and risk-adjusted discount rates, unit technical cost and break-even price calculation, reserve-based lending and borrowing base mechanics, debt service coverage ratio and gearing debt sizing, amortisation, sculpted repayment and cash sweep mechanics, reserve account and distribution lock-up modelling, commodity price and interest rate hedging, Monte Carlo simulation with distribution and correlation modelling, probability of economic success analysis, PRMS reserves categorisation, real options and binomial tree valuation, decision tree and expected monetary value analysis, portfolio optimisation under capital rationing, and model audit and documentation standards.

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Q5 How is the "The 10-Day Advanced Financial Modelling & Petroleum Project Economics" course applied in real-world practice?

Graduates apply it to build and review integrated petroleum models, forecast production and field development profiles, model concessionary and production sharing fiscal terms, value upstream assets and calculate break-even prices, size reserve-based debt and test covenant headroom, run Monte Carlo simulation on reserves and price assumptions, apply real options to staged development decisions, optimise capital across an asset portfolio, audit models prepared by colleagues, and present investment cases to boards and investment committees.