

Advanced Financial Modelling and Petroleum Project Economics Course

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Overview

Advanced Financial Modelling and Petroleum Project Economics Course is a two-week advanced course for petroleum economists, financial modelers, investment analysts, planners, and commercial decision-makers who leave with an Audited Petroleum Investment Model and Decision Pack. Participants integrate production, price, cost, fiscal, financing, valuation, uncertainty, and risk assumptions in a controlled cash-flow model. The course turns fragmented inputs into traceable investment evidence. Agile Leaders Training Center presents this course on petroleum financial modelling and project economics.

Who Should Attend

- Teams responsible for petroleum economic evaluation and assurance
- Functions responsible for financial modelling and investment analysis
- Personnel responsible for development planning and commercial assumptions
- Groups responsible for project finance and fiscal analysis
- Managers responsible for capital allocation and investment decisions

The course assumes participants can use spreadsheets, interpret project assumptions, and apply basic time-value-of-money concepts; it leaves out introductory accounting and reservoir simulation.

Departments and Industries

The course supports departments and industries that evaluate capital-intensive subsurface and energy investments.

- Oil and gas operators and service companies
- Energy, geothermal, and infrastructure investors
- Petroleum economics and commercial departments
- Corporate finance and project finance functions
- Development planning and portfolio teams
- Investment assurance and strategy groups

Learning Objectives

By the end of this course, participants will be able to:

- Build a controlled petroleum project cash-flow model
- Analyze production, price, cost, fiscal, and financing assumptions
- Apply discounted valuation and economic indicators
- Evaluate sensitivity, scenarios, uncertainty, and risk
- Compare projects and prioritize investment choices
- Audit and present a decision-ready economic model

Course Agenda

Day 1: Architect the Economic Model

- Petroleum Project Economic Evaluation Map
- Model Input, Calculation, and Output Architecture
- Assumption Register and Source Traceability Log
- Spreadsheet Control and Error Check Framework
- Model Timeline and Calculation Convention Sheet

Day 2: Model Production and Revenue

- Production Profile and Working Interest Schedule
- Product Price and Differential Assumption Table
- Sales Volume and Revenue Calculation Module
- Inflation, Escalation, and Exchange Rate Method
- Revenue Reconciliation and Variance Check

Day 3: Build Life-Cycle Costs

- Development CAPEX Phasing Model
- Operating Cost Driver and Unit Cost Schedule
- Maintenance and Replacement Capital Forecast
- Decommissioning and Abandonment Cost Provision
- Cost Estimate Basis and Contingency Register

Day 4: Construct Discounted Cash Flow

- Real and Nominal Cash Flow Bridge
- Working Capital and Tax Depreciation Schedule
- Pre-Tax and Post-Tax Cash Flow Statement
- Discount Factor and Present Value Calculation
- Cash Flow Integrity Reconciliation Test

Day 5: Model Fiscal Terms

- Royalty and Production Sharing Calculation Map
- Cost Recovery and Profit Petroleum Module
- Income Tax and Loss Carry-Forward Schedule
- Government Take and Contractor Value Metrics
- Fiscal Term Comparison Scenario Table

Day 6: Evaluate Financing and Returns

- Debt Drawdown and Repayment Schedule
- Interest, Fees, and Financing Cash Flow Module
- Net Present Value and Internal Rate of Return Metrics
- Payback, Profitability Index, and Break-Even Model
- Financing Structure and Equity Return Bridge

Day 7: Test Sensitivity and Scenarios

- One-Way Sensitivity Data Table
- Two-Way Price and Cost Sensitivity Matrix
- Integrated Development Scenario Manager
- Break-Even Price and Volume Curve
- Tornado Chart and Value Driver Ranking

Day 8: Quantify Uncertainty and Risk

- Uncertain Input Distribution Register
- Monte Carlo Simulation Logic and Output Map
- Expected Monetary Value Decision Tree
- Risked Value and Chance-Adjusted Economics
- Downside Case and Investment Exposure Profile

Day 9: Compare and Assure Investments

- Incremental and Mutually Exclusive Project Analysis
- Capital Rationing and Portfolio Ranking Matrix
- Model Audit Checklist and Formula Review
- Investment Decision Dashboard and Narrative
- Model Documentation and Handover Pack

Day 10: Practice Investment Decisions

- Suggested Exercise: Diagnose a Petroleum Model
- Suggested Exercise: Build a Fiscal Cash Flow
- Suggested Exercise: Test Price and Cost Uncertainty
- Suggested Exercise: Defend a Portfolio Ranking
- Capstone Exercise: Present an Audited Petroleum Investment Model and Decision Pack

Practical Exercises

The course uses suggested activities to convert technical and commercial assumptions into traceable investment evidence.

- Suggested activity: structure production, price, cost, fiscal, financing, and abandonment inputs in a controlled model.
- Suggested activity: calculate cash flow, valuation indicators, break-even points, and contractor and government outcomes.
- Suggested activity: test sensitivities, scenarios, distributions, and decision-tree alternatives.
- Suggested activity: audit the model and present a ranked investment recommendation with assumptions and limitations.

FAQs

Who suits advanced petroleum financial modelling training, and what does it assume?

Petroleum economists, financial modelers, analysts, planners, commercial specialists, and investment decision-makers suit the training. It assumes spreadsheet competence, familiarity with project assumptions, and basic time-value-of-money knowledge.

How does petroleum project economics training differ from general financial modelling training?

Petroleum project economics training integrates production profiles, price differentials, life-cycle costs, fiscal terms, abandonment, uncertainty, and petroleum investment decisions. General financial modelling training usually focuses on corporate statements and broader business forecasts.

Which indicators are used in petroleum project economics?

Petroleum project economics uses net present value, internal rate of return, payback, profitability index, break-even measures, government take, contractor value, and risk-adjusted results according to the decision context.

How are fiscal terms represented in a petroleum financial model?

Fiscal terms are represented through linked royalty, cost-recovery, profit-sharing, tax, loss, and government-revenue calculations that reconcile with project cash flow and contractor value.

How is uncertainty tested in petroleum project valuation?

Uncertainty is tested through sensitivity tables, scenarios, break-even analysis, input distributions, simulation outputs, expected monetary value, downside cases, and explicit decision assumptions.

Conclusion

Participants take an Audited Petroleum Investment Model and Decision Pack back to their organization. It connects production, price, cost, fiscal, financing, valuation, sensitivity, uncertainty, risk, and portfolio evidence in one controlled model. Teams can use it to compare opportunities, challenge assumptions, and support traceable capital decisions.

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