

PETROLEUM ECONOMICS AND RISK ANALYSIS

DAY 1

Session 1: Financial Reporting & Performance Measurement

[Introduction to Petroleum Economics](#)

- Course Overview and Objectives
- The Petroleum Industry Value Chain

[The Financial Statements](#)

- The Balance Sheet
- The Profit & Loss Statement
- The Cash Flow Statement

Case Study: Integrated Exercise: create key financial statements from raw data

[Accounting Ratios & Key Performance Indicators](#)

- What are the key financial ratios – brief overview

Session 2: Cash Flow Analysis and Project Evaluation

[Cash Versus Profit](#)

- The difference between cash flow and profit

[Introduction to Financial Theory](#)

- Risk, Return and Value
- The Time Value of Money
- The Cost of Capital

[Project Investment Analysis](#)

- Preparing a discounted cash flow statement
- Economic Indicators: NPV IRR etc

Case Study: Simple ‘hands on’ evaluation of an upstream oil project. Purpose is to understand the basic process of discounted cash flow analysis

Review Day 1

Delivery Style: Lecture/“Hands On” PC based

DAY 2

Session 3: Economic Models & Spreadsheet Design

[Economic Models and Spreadsheet Design](#)

- Structuring an economic model
- Useful functions: IF, MIN, Match, Scenarios
- Building in checks to avoid errors

Case Study: Downstream Example – Refinery/Petrochemical Project. Purpose is to build a more comprehensive model that allows for scenario and sensitivity analysis

[Calculation of Margins](#)

- Cash Margin
- Full Cost Margin

Session 4: Fiscal Regimes

[Fiscal Regimes](#)

- The concept of economic rent
- Royalty/Excise Regimes
- Production Sharing Contracts (PSC)
- Contractor Take versus Government Take

Case Study: Evaluate an upstream project under a PSC regime and a royalty regime. Understand the implications for cash flow and investor return.

Review Day 2

DAY 3

Session 5: Risk, Uncertainty & Decision Analysis

[Risk and Sensitivity Analysis](#)

- Sensitivity Analysis
- An introduction to Monte Carlo Analysis
- Inflation impacts: Real/Nominal

Case Study: Adjust our model to incorporate real and nominal cash flow impacts

[Decision Analysis](#)

- Expected Monetary Values
- Decision Trees
- Valuing exploration properties

Session 6: Corporate Finance

[Sources of Capital](#)

[Valuation of Corporate Liabilities](#)

- Valuing Bonds, Loans etc

[Oil and Gas Stock Valuation](#)

- Equity Valuation Methods, DCF, multiples

Case Study: Valuation of a listed oil and gas company on the basis of its publicly available information

[Course Review and Summary](#)

Times: Course start 8.30am. Morning Break 10am. Lunch 12pm. Afternoon Break 2.30pm. Course ends 4.30pm