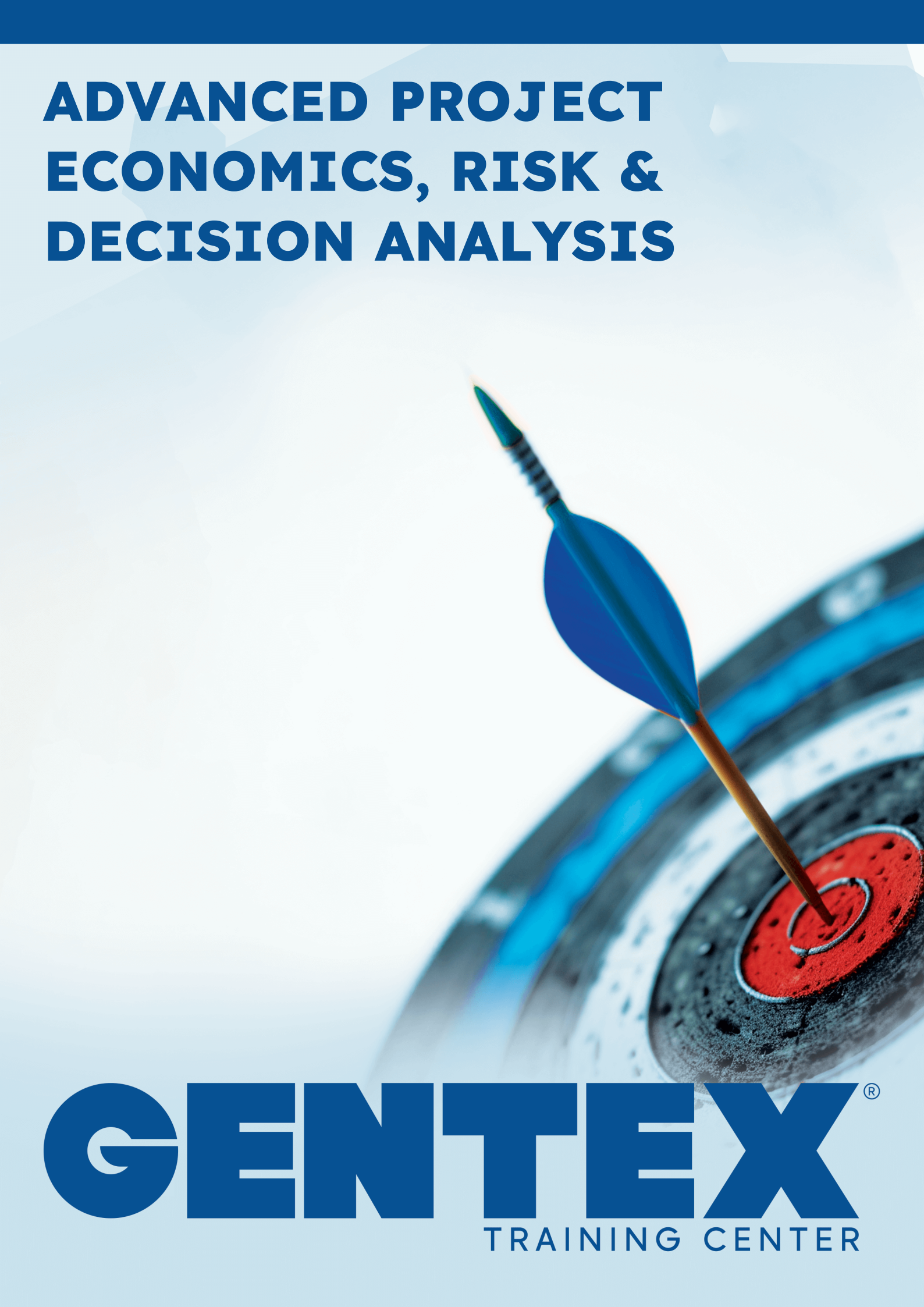
ADVANCED PROJECT ECONOMICS, RISK & DECISION ANALYSIS



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Info@gentextraining.com

Introduction

Advanced Project Economics, Risk & Decision Analysis Training Course builds the analytical discipline that turns a project proposal into a defensible decision. Project economics lives or dies on assumptions: demand forecasts, capital estimates, operating costs, and discount rates. When those assumptions go untested and risk stays qualitative, approval becomes an act of faith. This course builds the opposite practice. It covers cash flow modelling, project valuation, and decision criteria. Furthermore, it applies sensitivity analysis, scenario design, Monte Carlo simulation, decision trees, and real options. In addition, it develops risk registers, mitigation planning, and decision documentation. As a result, participants produce project appraisals that withstand challenge.

Advanced Project Economics, Risk & Decision Analysis Course Objectives

- Build integrated project cash flow models with clear assumptions.
- Apply NPV, IRR, payback, and profitability index decision criteria.
- Estimate cost of capital and select defensible discount rates.
- Calculate break-even points and project economic limits.
- Perform sensitivity analysis using data tables and tornado charts.
- Design scenarios and evaluate outcomes under uncertainty.
- Apply Monte Carlo simulation to quantify project risk exposure.
- Construct decision trees for staged and sequential decisions.
- Apply real options thinking to flexibility and deferral value.
- Build risk registers, mitigation plans, and decision documentation.

Course Methodology

- Interactive lectures with real project appraisal and risk cases.

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- Project cash flow and valuation modelling workshops.
- Sensitivity, scenario, and Monte Carlo analysis exercises.
- Decision tree and real options construction practice.
- Structured peer review with facilitator feedback on recommendations.

Who Should Take This Course

- Project and investment analysts.
- Project finance and corporate finance professionals.
- Feasibility study and business planning analysts.
- Project managers with financial responsibility.
- Risk analysts and risk managers.
- Consultants preparing appraisal and investment reports.

Advanced Project Economics, Risk & Decision Analysis Course Outlines

Day 1: Project Cash Flow and Valuation Modelling

- Project model structure and assumption documentation.
- Revenue, cost, and capital expenditure forecasting.
- Working capital, tax, and cash flow integration.
- Time value of money and discounting principles.
- Net present value and internal rate of return application.
- Payback, discounted payback, and profitability index.
- Case study: building a project cash flow model from scratch.

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Day 2: Decision Criteria and Cost of Capital

- Cost of capital estimation and hurdle rate setting.
- Project versus company discount rate selection.
- Terminal value and project life assumptions.
- Mutually exclusive and capital-constrained project ranking.
- Inflation, escalation, and real versus nominal cash flows.
- Economic limit and shutdown point calculation.
- Workshop: ranking competing project options by value.

Day 3: Sensitivity, Scenario, and Risk Analysis

- Sensitivity analysis with data tables and tornado charts.
- Scenario design and case management structures.
- Break-even and switchover value calculation.
- Probability estimation and risk quantification methods.
- Risk register construction and mitigation planning.
- Qualitative and quantitative risk assessment integration.
- Workshop: running a scenario analysis on a project model.

Day 4: Monte Carlo and Decision Trees

- Monte Carlo simulation design and distribution selection.
- Correlation and dependency between risk variables.
- Interpreting probability outputs and confidence intervals.
- Decision tree construction and expected value calculation.
- Sequential and staged decision modelling.

- Value of information and information gathering decisions.
- Workshop: simulating project outcomes and interpreting results.

Day 5: Real Options, Governance, and Decision Reporting

- Real options concepts: deferral, expansion, abandonment.
- Option valuation approaches applied to projects.
- Project governance and decision gate structures.
- Documenting assumptions, analysis, and recommendations.
- Preparing investment committee papers and executive summaries.
- Post-decision review and lessons learned process.
- Course review, assessment, and action planning.

Conclusion

By successfully completing Advanced Project Economics, Risk & Decision Analysis, participants will gain a thorough understanding of project cash flow modelling, valuation and decision criteria, cost of capital, sensitivity and scenario analysis, Monte Carlo simulation, decision trees, real options, and risk and decision governance. They will also acquire practical skills in project cash flow modelling and valuation, decision criteria and cost of capital application, risk quantification using sensitivity and Monte Carlo methods, and decision tree and real options analysis. In addition, the course prepares them to support project decisions with analysis that withstands challenge. Gentex Training Center delivers this programme with a strong focus on applied analytical technique and defensible decisions.

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FAQs for Advanced Project Economics, Risk & Decision Analysis course

Q1 What is the "Advanced Project Economics, Risk & Decision Analysis" course about?

It is a five-day programme on testing a project's economics and quantifying its risk before it is approved. It covers cash flow modelling, NPV, IRR and payback criteria, cost of capital, sensitivity and scenario analysis, Monte Carlo simulation, decision trees, real options, risk registers, and decision documentation.

Q2 What are the key benefits of the "Advanced Project Economics, Risk & Decision Analysis" course?

Participants stop approving projects on untested assumptions. The course exposes weak demand and cost forecasts early, sharpens discount rate and break-even calculation, quantifies downside risk explicitly, improves ranking of competing options, adds value through staged and flexible decisions, and raises the quality of investment committee papers.

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

Participants gain project cash flow modelling and valuation, decision criteria and cost of capital application, risk quantification using sensitivity and Monte Carlo methods, and decision tree and real options analysis. These four skills cover the practical core of project economics and risk work.

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

The course covers project model structure and assumption documentation, revenue, cost and capital expenditure forecasting, working capital and tax integration, time value of money, net present value, internal rate of return, payback, discounted payback and profitability index, cost of capital estimation and hurdle rate setting, project versus company discount rates, terminal value analysis, mutually exclusive and capital-constrained project ranking, inflation and escalation treatment, real versus nominal cash flow analysis, economic limit and shutdown point calculation, sensitivity analysis with data tables and tornado charts, scenario design and case management, break-even and switchover value calculation, probability estimation, risk register construction, mitigation planning, Monte Carlo simulation with distribution selection, correlation and dependency analysis, confidence interval interpretation, decision tree construction and expected value calculation, sequential and staged decision modelling, value of information analysis, real options valuation for deferral, expansion and abandonment, project governance and decision gates, investment committee paper preparation, and post-decision review processes.

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

Participants apply the methods to live and simulated projects. They build cash flow models, test assumptions, calculate NPV and IRR, set hurdle rates, rank competing options, run sensitivity and scenario analysis, simulate outcomes with Monte Carlo, build decision trees, assess option value, compile risk registers with mitigation plans, and prepare investment committee papers. Many leave with a project model template, a risk quantification workbook, and a decision documentation structure ready to use.