Financial Decision Engineering

2 – 6 May 2027
Riyadh (KSA)



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Why This Course

In a world of financial uncertainty and rapid technological change, traditional decision-making is no longer sufficient.

Organizations must adopt engineering-based approaches that combine financial intelligence, data analytics, and quantitative modeling to evaluate risk, optimize capital, and maximize value creation.

The Financial Decision Engineering program equips participants with analytical frameworks, modeling tools, and strategic methodologies to design and evaluate financial decisions with precision and foresight.

It blends financial theory, quantitative reasoning, and systems thinking, enabling professionals to make data-informed decisions that drive profitability, risk efficiency, and sustainable performance.

Through interactive case studies, modeling exercises, and scenario-based learning, participants will learn how to apply engineering logic to complex financial problems — turning data into strategic advantage.

What You'll Learn and Practice

By joining this program, you will:

- Understand the principles and frameworks of Financial Decision Engineering.
- Apply quantitative and data-driven methods to evaluate financial alternatives.
- Use financial modeling and optimization tools for investment and capital decisions.
- Integrate risk analysis, sensitivity testing, and scenario planning into financial strategy.
- Design multi-variable decision models for corporate finance, budgeting, and forecasting.
- Enhance decision quality using Monte Carlo simulations, regression, and NPV modeling.
- Link financial engineering with strategic planning, risk control, and sustainability.
- Build a decision architecture that improves accuracy, agility, and accountability.



The Program Flow

Day 1: Foundations of Financial Decision Engineering

- The evolution of decision-making in modern finance.
- Systems thinking and engineering principles applied to finance.
- Frameworks for financial decision design and evaluation.
- Linking financial decisions to corporate strategy and risk management.
- Case study: Decision engineering in capital allocation and investment selection.

Day 2: Quantitative Analysis and Financial Modeling

- Principles of financial modeling and analytical forecasting.
- Building dynamic financial models using key performance drivers.
- Sensitivity, scenario, and break-even analysis.
- Probability-based decision tools for uncertainty management.
- Workshop: Developing a financial decision model using real-world data.

Day 3: Risk Analytics and Optimization Techniques

- Identifying and quantifying financial and operational risks.
- Value at Risk VaR, Conditional Value at Risk CVaR, and risk-return trade-offs.
- Multi-criteria optimization and linear programming applications.
- Capital budgeting under uncertainty and constraints.
- Simulation: Designing an optimal investment portfolio using risk-adjusted models.

Day 4: Decision Systems, Forecasting, and Performance Management

- Decision support systems DSS and financial information architecture.
- Integrating data analytics, AI, and automation in financial decision-making.
- Forecasting models: time series, regression, and machine learning insights.
- Performance measurement — financial KPIs and decision accountability.
- Group exercise: Building a decision dashboard for financial performance tracking.

Day 5: Strategic Application and Enterprise Integration

- Aligning financial decisions with enterprise goals and capital strategy.
- Decision governance, bias mitigation, and ethical finance.
- Sustainable finance — integrating ESG and long-term value perspectives.
- Future of decision engineering: AI, digital twins, and intelligent finance systems.
- Final project: Developing a Financial Decision Engineering blueprint for your organization.



Individual Impact

- Gain advanced analytical and modeling skills for financial decision-making.
- Strengthen quantitative reasoning and strategic evaluation capabilities.
- Learn to balance risk, value, and sustainability in financial strategies.
- Build confidence in using data and technology for financial optimization.
- Position yourself as a Financial Decision Engineering Professional — a leader capable of turning data into strategic advantage.

Work Impact

- Improve the precision, speed, and reliability of financial decisions.
- Strengthen capital allocation, investment, and risk management strategies.
- Enhance performance forecasting and scenario planning.
- Foster a data-driven and analytical decision culture across finance teams.
- Drive measurable business growth through optimized financial architecture.

Training Methodology

This program blends engineering principles, data analytics, and strategic finance to ensure both conceptual mastery and real-world application.

Learning methods include:

- Case studies from global financial institutions and corporations.
- Interactive workshops on quantitative modeling and scenario analysis.
- Simulation exercises using decision optimization tools.
- Group discussions on governance and ethical decision-making.
- Toolkits, templates, and dashboards for professional implementation.

Beyond the Course

Upon completion, participants will be equipped to design, evaluate, and lead data-driven financial decision processes that enhance value, reduce uncertainty, and strengthen strategic performance.

Graduates of this program will emerge as Financial Decision Engineering Leaders — professionals capable of blending analytical rigor, financial insight, and strategic thinking to engineer better business outcomes.

