JUPITER PRIME

Consulting • Training • Advisory

جوبيتر برايم للاستشارات والتدريب

COURSE BROCHURE

# Advanced Probabilistic Spreadsheet Financial Modelling Training Course

12 – 23 July 2027
Dar es Salaam

**jupiterprime.uk**

info@jupiterprime.uk

Registered in the United Kingdom and Saudi Arabia

# Advanced Probabilistic Spreadsheet Financial Modelling Training Course

**Ref:** 2571_97803 **Date:** 12 – 23 July 2027 **Location:** Dar es Salaam **Fees:** 14000 GBP

Probabilistic Spreadsheet Financial Modelling is a 2-week advanced training course for financial analysts and corporate finance staff who need valuations, budgets and investment cases that show a range of outcomes rather than one point estimate, with a stochastic investment case model as the work product. Boards and lenders now ask how likely a target is, not only what it is. Jupiter Prime Training delivers this course on Probabilistic Spreadsheet Financial Modelling.

## Why Probabilistic Spreadsheet Financial Modelling Matters Now

Volatile commodity prices, shifting interest rates and supply shocks have exposed the weakness of single-number forecasts. Investment committees, lenders and audit committees increasingly expect a stated probability of meeting a hurdle rate, covenant or budget target. An organisation that expresses uncertainty well commits capital with open eyes, sizes contingencies sensibly and defends its forecasts under challenge. One that relies on a best guess with a few hand-picked sensitivities tends to be surprised, over-commit or hold idle buffers. The course rests on established practice in probability distributions, random sampling simulation, correlation modelling and risk-adjusted valuation.

## Who Gains Most from Probabilistic Spreadsheet Financial Modelling

- Analysts who build valuation and investment appraisal cases for capital allocation decisions
- Corporate finance staff who prepare budgets, rolling forecasts and funding requests
- Specialists who quantify project, commodity and market exposures for risk committees
- Treasury staff who test liquidity headroom and covenant compliance under stress
- Reviewers who challenge the assumptions and logic of models submitted by business units

A corporate finance or investment appraisal unit gains most when several of its analysts attend together and agree one approach to distributions, correlation and output reporting.

## Probabilistic Spreadsheet Financial Modelling Capabilities

Participants move from deterministic cash flow arithmetic to models that sample uncertain drivers thousands of times and report the spread of value, cash and returns.

- Specify probability distributions for revenue, cost and timing drivers from history and expert elicitation — investment committees
- Build a simulation engine inside a three-statement model using random sampling and iteration — model owners
- Calculate percentile outcomes, probability of loss and value at risk for net present value — capital allocation decisions
- Test correlation between inputs so that joint downside cases are not understated — risk committees
- Weigh real options such as delay, expansion and abandonment against a static case — project sponsors
- Communicate ranges, tornado rankings and confidence statements in plain language — boards and lenders

## Key Probabilistic Spreadsheet Financial Modelling Terms

- Probability distribution — a description of every value an uncertain input can take and how likely each value is.
- Random sampling simulation — repeated recalculation of a model with inputs drawn from their distributions to build a picture of possible outcomes.
- Percentile P10, P50, P90 — the outcome below which a stated share of simulated results falls, used to describe low, central and high cases.
- Correlation coefficient — a number between minus one and one showing how strongly two uncertain inputs move together.
- Expected net present value — the probability-weighted average of discounted cash flow outcomes across all simulated iterations.
- Tornado chart — a ranked bar chart showing which inputs drive the largest swings in a chosen model output.

## Probabilistic Spreadsheet Financial Modelling Day by Day

## Day 1: Uncertainty in Corporate Finance Decisions

- Point Estimates Versus Ranges — Why Single Forecasts Mislead Capital Committees
- Risk, Uncertainty and Ambiguity — Choosing What a Model Can Quantify
- Decision Questions for Probabilistic Models — Hurdle Rates, Covenants and Budget Targets
- Stakeholder Appetite for Ranges — Boards, Lenders and Business Unit Heads
- Deterministic Model Audit — Readiness of an Existing Case for Simulation

## Day 2: Probability Foundations for Modellers

- Discrete and Continuous Distributions — Matching Shape to Driver Behaviour
- Normal, Lognormal and Triangular Shapes — Price, Volume and Cost Inputs
- Mean, Variance and Skew — Reading the Risk Profile of an Input
- Tail Behaviour and Extreme Values — Exposure to Rare but Severe Losses
- Law of Large Numbers — Setting the Iteration Count for Stable Results

## Day 3: Calibrating Inputs from Evidence

- Fitting Distributions to Historical Series — Defensible Ranges for Price Drivers
- Structured Expert Elicitation — Ranges Where History Is Thin
- Three-Point Estimates — Minimum, Most Likely and Maximum for Cost Lines
- Bias in Judgement — Overconfidence and Anchoring in Business Unit Inputs
- Assumption Register for Uncertain Drivers — Traceable Sources for Each Range

## Day 4: Building the Simulation Engine

- Random Number Generation in Cells — Repeatable Sampling with Fixed Seeds
- Inverse Transform Sampling — Turning Uniform Draws into Chosen Distributions
- Data Tables as Iteration Loops — Thousands of Recalculations Without Code
- Output Capture Sheets — Storing Each Iteration for Later Statistics
- Calculation Speed and File Stability — Practical Limits on Model Size

## Day 5: Dependence Between Inputs

- Correlation Matrices — Linking Price, Volume and Exchange Rate Drivers
- Rank Correlation Methods — Joint Movement Without Distorting Shapes
- Time Series Persistence — Carrying Shocks Forward Across Forecast Years
- Common Cause Drivers — Modelling a Downturn That Hits Several Lines
- Understated Joint Risk — Effect of Ignoring Dependence on Downside Cases

## Day 6: Stochastic Three-Statement Models

- Uncertain Drivers in the Income Statement — Revenue, Margin and Overhead Ranges
- Balance Sheet Integrity Under Simulation — Checks That Hold in Every Iteration
- Cash Flow Waterfall Under Uncertainty — Probability of Funding Shortfalls
- Covenant Breach Probability — Leverage and Interest Cover Across Iterations
- Probabilistic Budgets — Contingency Sized to a Chosen Confidence Level

## Day 7: Risk-Adjusted Valuation

- Distribution of Net Present Value — Probability of Value Destruction
- Expected Value Versus Most Likely Case — Reconciling Two Valuation Views
- Discount Rate Choice Under Simulation — Avoiding Double Counting of Risk
- Internal Rate of Return Spread — Chance of Clearing the Hurdle Rate
- Value at Risk and Conditional Loss — Sizing the Downside for Capital Allocation

## Day 8: Flexibility and Real Options

- Decision Trees — Staged Investment and Information Value
- Option to Delay — Waiting for Price or Demand Signals Before Committing
- Expansion and Abandonment Options — Value of Changing Course Mid-Project
- Trigger Rules in Simulation — Management Responses Coded into Iterations
- Value of Flexibility — Comparing Static and Adaptive Investment Cases

## Day 9: Reading and Reporting the Results

- Histograms and Cumulative Curves — Showing the Full Range of Outcomes
- Tornado and Spider Charts — Ranking Drivers for Mitigation Effort
- Confidence Statements in Plain Language — Board Papers and Lender Memos
- Convergence and Error Testing — Trust in Simulated Percentiles
- Independent Challenge of Probabilistic Models — Reviewer Checklist and Sign-Off

## Day 10: Practising the Stochastic Investment Case Model

- Calibrated Input Distributions — Applying Evidence and Elicitation from Earlier Days
- Correlated Simulation Engine — Applying Dependence and Iteration Design
- Risk-Adjusted Valuation Outputs — Applying Percentiles, Expected Value and Options
- Peer Challenge Session — Testing Assumptions and Convergence of Each Case
- Stochastic Investment Case Model — Completed Model and Board-Ready Range Summary

## Applying Probabilistic Spreadsheet Financial Modelling After the Course

- Convert one live investment case into a simulation with calibrated distributions and a correlation matrix, then report P10, P50 and P90 values to its sponsor.
- Run a structured elicitation session with business unit heads to replace single-point budget assumptions with three-point ranges and an assumption register.

## Probabilistic Spreadsheet Financial Modelling Questions FAQ

### What is Probabilistic Spreadsheet Financial Modelling and why does it matter now?

It is the practice of building financial models whose key inputs are ranges, sampled thousands of times to show the likely spread of value and cash. It matters now because volatile markets make single forecasts fragile and decision makers want stated probabilities.

### Which roles gain most from Probabilistic Spreadsheet Financial Modelling?

Financial analysts, corporate finance staff, treasury specialists and model reviewers gain most. Each of them prepares or challenges forecasts that support capital, funding or budget decisions where the downside must be understood, not guessed.

### How does Probabilistic Spreadsheet Financial Modelling differ from a general financial modelling course?

It goes beyond building a three-statement model with a few sensitivities. A general course teaches structure and deterministic forecasting; this one adds distributions, correlation, simulation, risk-adjusted valuation and real options, assuming you can already build an integrated model.

## What do you bring back from Probabilistic Spreadsheet Financial Modelling?

You bring back a working simulation model built on one of your own cases. It includes calibrated input ranges, a correlation structure, percentile valuation outputs and a short summary that explains the range of outcomes to decision makers.

## Probabilistic Spreadsheet Financial Modelling: The Way Forward

The stochastic investment case model gives an investment committee its first decision: whether the probability of clearing the hurdle rate justifies committing capital. Analysts own it, sponsors and lenders read its range summary, and reviewers test its convergence. After first use, revisit the correlation assumptions, because joint downside behaviour is the input most often understated and most worth refining.