Datastat Research
Building Capacity in Training and Research

DATASTAT TRAINING IN

OFFICIAL COURSE PROSPECTUS

Center for Advanced Research & Professional Development

Nairobi Training Center • Global Virtual Academy • Corporate On-Site

ACCOUNTING AND FINANCE

Advanced Financial Simulation and Monte Carlo Modelling Training Course

Comprehensive Course Syllabus, Practical Modules & Upcoming Schedules

PROGRAM SPECIFICATIONS & HIGHLIGHTS

- **DURATION**
  5 Days Practical Hands-on
- **DELIVERY MODES**
  In-Person Class & Live Virtual
- **CERTIFICATION**
  Accredited Certificate of Completion
- **INTAKES / DATES**
  Multiple Cohort Schedules Included

PREPARED FOR:

Valued Participant

Email: training@datastatresearch.org | Issued: November 24, 2026

Academic & Professional Training Year: 2026

DATASTAT TRAINING INSTITUTE

P.O. Box 102802-00101, Nairobi, Kenya

Training Centers: Nairobi • Mombasa • Kigali • Dubai • Live Virtual Academy

Tel: +254 724 527 104 | +254 734 969 612

Email: training@datastatresearch.org

www.datastatresearch.org

Advanced Financial Simulation and Monte Carlo Modelling Training Course

Accounting and Finance • 5 Days Intensive • Accredited Certification

Course Overview

Advanced Financial Simulation and Monte Carlo Modelling Training Course provides professionals with practical expertise in financial forecasting, quantitative analysis, stochastic modelling, and risk-based decision-making.

Key Skills & Software Tools Covered

MS Word • Microsoft Excel • @RISK (Palisade) • and Oracle Crystal Ball

Upcoming Training Schedules

Confirmed cohort intakes and venues. Both physical in-person classroom and live virtual online seats are available.

TRAINING DATES	LOCATION / VENUE	FORMAT / DURATION	INVESTMENT (FEE)
30 Nov 2026 – 4 Dec 2026	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
7 Dec 2026 – 11 Dec 2026	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
14 Dec 2026 – 18 Dec 2026	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
21 Dec 2026 – 25 Dec 2026	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
28 Dec 2026 – 1 Jan 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
4 Jan 2027 – 8 Jan 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
11 Jan 2027 – 15 Jan 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
18 Jan 2027 – 22 Jan 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
25 Jan 2027 – 29 Jan 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
1 Feb 2027 – 5 Feb 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
8 Feb 2027 – 12 Feb 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
15 Feb 2027 – 19 Feb 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
22 Feb 2027 – 26 Feb 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
1 Mar 2027 – 5 Mar 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
8 Mar 2027 – 12 Mar 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
15 Mar 2027 – 19 Mar 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
22 Mar 2027 – 26 Mar 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
29 Mar 2027 – 2 Apr 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
5 Apr 2027 – 9 Apr 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
12 Apr 2027 – 16 Apr 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
19 Apr 2027 – 23 Apr 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
26 Apr 2027 – 30 Apr 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**

3 May 2027 – 7 May 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
10 May 2027 – 14 May 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
17 May 2027 – 21 May 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
24 May 2027 – 28 May 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
31 May 2027 – 4 Jun 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
7 Jun 2027 – 11 Jun 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
14 Jun 2027 – 18 Jun 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
21 Jun 2027 – 25 Jun 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
28 Jun 2027 – 2 Jul 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
5 Jul 2027 – 9 Jul 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
12 Jul 2027 – 16 Jul 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
19 Jul 2027 – 23 Jul 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
26 Jul 2027 – 30 Jul 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
2 Aug 2027 – 6 Aug 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
9 Aug 2027 – 13 Aug 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
16 Aug 2027 – 20 Aug 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
23 Aug 2027 – 27 Aug 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
30 Aug 2027 – 3 Sep 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
6 Sep 2027 – 10 Sep 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
13 Sep 2027 – 17 Sep 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
20 Sep 2027 – 24 Sep 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
27 Sep 2027 – 1 Oct 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
4 Oct 2027 – 8 Oct 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
11 Oct 2027 – 15 Oct 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
18 Oct 2027 – 22 Oct 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
25 Oct 2027 – 29 Oct 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
1 Nov 2027 – 5 Nov 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
8 Nov 2027 – 12 Nov 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
15 Nov 2027 – 19 Nov 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
22 Nov 2027 – 26 Nov 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
29 Nov 2027 – 3 Dec 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
6 Dec 2027 – 10 Dec 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**

13 Dec 2027 – 17 Dec 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**
20 Dec 2027 – 24 Dec 2027	Nairobi	Classroom / 5d	**$1,500 USD / KES 110,000**

* Corporate discounts and customized cohort scheduling are available for teams of 3 or more participants.

Course Curriculum & Modules

Advanced Financial Simulation and Monte Carlo Modelling Training Course

Introduction

Advanced Financial Simulation and Monte Carlo Modelling Training Course provides professionals with practical expertise in financial forecasting, quantitative analysis, stochastic modelling, and risk-based decision-making. The course explores advanced financial simulation techniques, probability distributions, statistical modelling, scenario analysis, sensitivity analysis, and Monte Carlo methods to evaluate financial uncertainty. Participants will develop the ability to build sophisticated financial models, simulate multiple economic outcomes, assess investment risks, forecast cash flows, and evaluate financial performance under changing market conditions. Emphasis is placed on data-driven financial planning, predictive analytics, computational finance, and advanced financial risk management.

The course also examines how Monte Carlo simulation supports capital budgeting, investment valuation, portfolio optimisation, financial planning, and strategic business decisions. Through practical exercises and global case studies, participants will learn to use simulation software, interpret probabilistic outputs, develop risk-adjusted forecasts, and communicate complex financial insights to decision-makers. The programme integrates modern financial analytics, quantitative risk assessment, artificial intelligence applications, and advanced modelling practices to strengthen organisational resilience and improve financial decision-making in uncertain business environments.

Course Objectives

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

- Apply advanced Monte Carlo simulation techniques in financial modelling.
- Develop stochastic financial models for forecasting uncertainty.
- Analyse financial risks using probability distributions.
- Perform advanced sensitivity and scenario analysis.
- Build predictive financial models using historical datasets.
- Evaluate investment opportunities through probabilistic modelling.
- Apply quantitative methods in portfolio risk management.
- Simulate cash flows and investment returns under uncertainty.
- Integrate statistical analysis into financial forecasting.
- Assess financial exposure using Value at Risk methodologies.
- Optimise capital allocation using simulation-based analysis.
- Interpret simulation outputs for strategic decision-making.
- Implement advanced financial analytics and risk modelling frameworks.

Organizational Benefits

- Improved financial forecasting accuracy and reliability.
- Stronger enterprise risk management capabilities.
- Better investment appraisal and capital allocation.
- Enhanced financial planning under uncertainty.
- Improved identification of potential financial losses.
- More informed strategic and operational decisions.
- Increased efficiency in financial modelling processes.
- Stronger portfolio performance evaluation.
- Improved financial resilience and business continuity.
- Better utilisation of financial data and predictive analytics.

Target Audiences

- Financial analysts and financial modelling professionals.
- Investment managers and portfolio analysts.
- Risk management professionals.
- Corporate finance managers and directors.

- Financial planners and business consultants.
- Banking and insurance professionals.
- Economists and quantitative researchers.
- Accountants, auditors, and financial controllers.

Course Duration: 10 days

Course Modules

Module 1: Foundations of Advanced Financial Simulation

- Principles of financial simulation and quantitative modelling.
- Deterministic versus stochastic financial models.
- Applications of simulation in financial decision-making.
- Financial model architecture and assumptions.
- Simulation limitations and validation techniques.
- Case study: Global banking institutions modelling financial uncertainty.

Module 2: Probability Theory and Statistical Distributions

- Probability theory in financial analysis.
- Normal, lognormal, binomial, and Poisson distributions.
- Expected values, variance, and standard deviation.
- Correlation and covariance in financial datasets.
- Selecting appropriate probability distributions.
- Case study: Modelling equity returns using historical market distributions.

Module 3: Advanced Monte Carlo Simulation Techniques

- Monte Carlo simulation principles and algorithms.
- Random number generation and sampling techniques.
- Iterations, convergence, and simulation accuracy.
- Developing probabilistic financial forecasts.
- Simulation outputs and confidence intervals.
- Case study: Investment portfolio simulation using Monte Carlo methods.

Module 4: Financial Data Preparation and Model Inputs

- Historical financial data collection and cleaning.
- Data normalisation and transformation.
- Identifying financial model assumptions.
- Handling missing values and outliers.
- Estimating simulation input parameters.
- Case study: Preparing multinational corporate financial datasets.

Module 5: Stochastic Modelling and Financial Forecasting

- Stochastic processes in financial markets.
- Random walks and geometric Brownian motion.
- Modelling uncertain revenue and expenditure.
- Forecasting interest rates and inflation.
- Developing dynamic financial projections.
- Case study: Forecasting uncertain energy market revenues.

Module 6: Cash Flow Simulation and Investment Appraisal

- Modelling uncertain project cash flows.
- Simulating Net Present Value and Internal Rate of Return.
- Discount rates and investment assumptions.
- Evaluating capital budgeting alternatives.
- Assessing investment feasibility under uncertainty.

- Case study: Infrastructure investment appraisal using probabilistic cash flows.

Module 7: Advanced Financial Risk Analysis

- Identifying financial and market risk exposures.
- Value at Risk and Conditional Value at Risk.
- Modelling credit and liquidity risks.
- Measuring downside financial exposure.
- Developing risk-adjusted financial forecasts.
- Case study: Global investment banks applying simulation-based risk analysis.

Module 8: Sensitivity Analysis and Scenario Modelling

- One-way and multi-way sensitivity analysis.
- Best-case, base-case, and worst-case scenarios.
- Identifying critical financial variables.
- Stress testing financial assumptions.
- Scenario-based strategic planning.
- Case study: Oil price volatility and multinational corporate profitability.

Module 9: Portfolio Simulation and Optimisation

- Portfolio returns and volatility modelling.
- Correlation and diversification analysis.
- Efficient frontier and portfolio optimisation.
- Simulating asset allocation alternatives.
- Measuring portfolio performance under uncertainty.
- Case study: Global pension fund portfolio risk optimisation.

Module 10: Financial Derivatives and Option Pricing

- Financial derivatives and pricing fundamentals.
- Simulating option prices using stochastic models.
- Black-Scholes model applications.
- Modelling volatility and market movements.
- Evaluating hedging strategies.
- Case study: Monte Carlo option pricing in international investment markets.

Module 11: Advanced Excel-Based Financial Simulation

- Building simulation models using Excel.
- Applying probability functions and data tables.
- Automating Monte Carlo simulations.
- Developing dynamic financial dashboards.
- Interpreting simulation results.
- Case study: Corporate financial planning using Excel simulation models.

Module 12: Python Applications in Monte Carlo Modelling

- Introduction to Python for quantitative finance.
- Using NumPy, pandas, and SciPy.
- Automating financial simulation processes.
- Visualising probability distributions and outcomes.
- Developing reusable financial modelling scripts.
- Case study: Automated portfolio simulation using Python.

Module 13: Financial Stress Testing and Model Validation

- Designing financial stress-testing frameworks.
- Backtesting simulation assumptions.
- Model calibration and performance evaluation.

- Identifying model risk and estimation errors.
- Documenting and validating simulation results.
- Case study: Banking sector stress testing under economic downturn conditions.

Module 14: Financial Simulation for Public-Private Partnerships (PPP)

- Financial modelling for Public-Private Partnerships (PPP).
- Simulating project costs and revenue uncertainty.
- Evaluating financing and concession structures.
- Assessing fiscal exposure and contingent liabilities.
- Risk allocation and financial sustainability analysis.
- Case study: Infrastructure financing and toll revenue simulation in international Public-Private Partnerships (PPP).

Module 15: Financial Simulation Reporting and Strategic Applications

- Interpreting probabilistic financial outputs.
- Communicating simulation findings to executives.
- Developing financial risk dashboards.
- Integrating simulation into strategic planning.
- Establishing continuous financial model improvement.
- Case study: Multinational corporations using simulation insights for strategic investment decisions.

Training Methodology

- Instructor-led presentations and technical discussions.
- Practical financial modelling and simulation exercises.
- Hands-on Monte Carlo modelling using Excel and Python.
- Group assignments involving financial risk scenarios.
- International case studies and industry-based simulations.
- Interactive demonstrations, assessments, and feedback sessions.

Register as a group from 3 participants for a Discount

Send us an email: info@datastatresearch.org or call +254724527104

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to DATASTAT CONSULTANCY LTD account, as indicated in the invoice so as to enable us prepare better for you.

Certification & Learning Methodology

- Hands-on practical delivery with real-world datasets, case studies, and lab exercises.
- Post-training mentorship, access to class resources, and customized follow-up support.
- Participants who successfully complete the course receive an accredited Datastat Certificate of Completion.

How to Enroll & Reserve Your Seat

1. Online Registration: Visit https://datastatresearch.org/courses/advanced-financial-simulation-and-monte-carlo-modelling-training-course to register online.
2. Email Booking: Send participant details to training@datastatresearch.org for official invoice & reservation.
3. Support & Assistance: Inquire via phone +254 724 527 104 | +254 734 969 612.