Training Course on Financial Risk Modelling and Stress Testing

Professional Development Training Course Outline

Category	CEOs and Directors	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today's volatile global economy, **Financial Risk Modeling** and **Stress Testing** are indispensable tools for maintaining financial stability and ensuring robust decision-making across all sectors. Training Course on Financial Risk Modelling and Stress Testing delves into the advanced techniques and methodologies required to identify, quantify, and mitigate complex financial risks, including **market risk**, **credit risk**, **liquidity risk**, and **operational risk**. Participants will gain critical insights into developing sophisticated risk models and implementing rigorous stress testing frameworks, crucial for navigating **economic uncertainty**, meeting **regulatory compliance** (e.g., **Basel III/IV**, **CCAR/DFAST**), and safeguarding organizational resilience in the face of adverse events and **black swan scenarios**.

This program goes beyond theoretical concepts, emphasizing practical application through **real-world case studies**, hands-on exercises, and the utilization of industry-standard tools. We aim to equip finance professionals with the expertise to design and execute effective stress testing programs, interpret results, and leverage them for **strategic capital planning**, **portfolio optimization**, and **enhanced risk governance**. By mastering these advanced **quantitative finance** techniques, participants will be empowered to proactively manage emerging risks, foster a strong **risk culture**, and contribute significantly to their organization's long-term **financial health** and **sustainability**.

Programme Curriculum

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Course Objectives

Upon completion of this training course, participants will be able to:

1. Develop and apply sophisticated **quantitative models** for **market risk**, **credit risk**, and **liquidity risk**, including **VaR (Value-at-Risk)**, **Expected Shortfall (ES)**, and **stress VaR**.
2. Construct comprehensive **stress testing methodologies** for various financial instruments and portfolios, aligning with **regulatory requirements** and **best practices**.
3. Create and analyze diverse **stress scenarios**, including **historical scenarios**, **hypothetical scenarios**, and **macroeconomic stress scenarios**, to assess potential impacts on financial institutions.
4. Understand and apply **reverse stress testing** to identify vulnerabilities and scenarios that could lead to extreme adverse outcomes.
5. Assess the impact of stress events on **capital adequacy** ratios and develop strategies for **capital planning** and **risk mitigation**.
6. Identify and mitigate **model risk** associated with financial risk models and stress testing frameworks, ensuring model validity and reliability.
7. Embed **financial risk modeling** and **stress testing** into the organization's broader **Enterprise Risk Management (ERM)** framework and **strategic decision-making**.
8. Utilize **big data analytics**, **machine learning**, and **AI** techniques to enhance the accuracy and efficiency of **risk modeling** and **stress testing**.
9. Understand and comply with evolving **global financial regulations** such as **Basel III/IV**, **Dodd-Frank (DFAST)**, and **CCAR**.
10. Apply stress testing to evaluate **systemic risk** and its implications for financial stability.
11. Conduct granular stress tests on diverse **investment portfolios**, identifying concentrations and interdependencies.
12. Develop clear, concise, and impactful **risk reports** and presentations for senior management, board members, and regulators.
13. Analyze the impact of emerging risks like **climate risk**, **ESG (Environmental, Social, and Governance) factors**, and **cyber risk** on financial stability and stress testing.

Organizational Benefits

- Proactive identification and mitigation of potential financial shocks, leading to greater stability.
- Optimized capital allocation and stronger capital buffers to withstand adverse economic conditions.
- Adherence to evolving global regulatory standards, minimizing penalties and reputational damage.
- Data-driven insights for better business planning, investment strategies, and risk appetite setting.
- Fostering a more risk-aware and accountable environment across all levels of the organization.
- Ability to navigate complex market dynamics with greater confidence and agility, leading to sustainable growth.
- Efficient deployment of resources by identifying and prioritizing key risk areas.
- Demonstrating robust risk management practices to investors, regulators, and other stakeholders.

Target Audience

1. Risk Managers and Analysts in financial institutions
2. Financial Analysts and Portfolio Managers.
3. Treasury Professionals and Asset-Liability Managers.
4. Regulatory Compliance Officers and Internal Auditors.
5. Financial Regulators and Central Bank Professionals.
6. Quantitative Analysts and Data Scientists in finance.
7. Senior Management involved in risk oversight and strategic planning.
8. Professionals seeking to enhance their knowledge in financial risk management and **stress testing** for career advancement.

Course Outline

Module 1: Foundations of Financial Risk Modeling

- Introduction to financial risks: Market, Credit, Liquidity, Operational, and emerging risks.
- Overview of **quantitative risk measures**.
- Statistical concepts for risk modeling: Probability distributions, hypothesis testing, time series analysis.
- Data requirements and challenges for robust risk modeling.
- Introduction to **model risk** and governance.
- **Case Study:** Analyzing the limitations of historical VaR during the 2008 financial crisis for a hypothetical investment bank.

Module 2: Market Risk Modeling and Measurement

- Advanced VaR methodologies: Parametric VaR, Historical Simulation VaR, Monte Carlo VaR.
- Volatility modeling: GARCH, EWMA, and implied volatility.
- Interest rate risk modeling (IRRBB) and foreign exchange risk.
- Stress VaR and extreme value theory (EVT).
- Hedging strategies and their impact on market risk.

- **Case Study:** Calculating and backtesting VaR for a multi-asset investment portfolio during a period of market volatility, comparing different methodologies.

Module 3: Credit Risk Modeling

- Credit risk types: Default risk, counterparty risk, concentration risk.
- Individual borrower models
- Portfolio credit risk models: Merton model, CreditMetrics, Vasicek model.
- Credit derivatives and their role in risk mitigation.
- Securitization and its credit risk implications.
- **Case Study:** Building a PD model for a retail loan portfolio using logistic regression and assessing its performance.

Module 4: Liquidity Risk Management and Modeling

- Sources and types of liquidity risk: Funding liquidity risk, market liquidity risk.
- Liquidity risk measurement tools: Liquidity coverage ratio (LCR), Net Stable Funding Ratio (NSFR).
- Dynamic liquidity modeling and stress testing.
- Contingency funding plans (CFP).
- Intra-day liquidity management.
- **Case Study:** Simulating a liquidity squeeze scenario for a commercial bank and evaluating the effectiveness of its contingency funding plan.

Module 5: Stress Testing Methodologies and Implementation

- Regulatory landscape: **Basel III/IV**, **DFAST**, **CCAR**, EBA guidelines.
- Designing stress testing programs: Objectives, scope, governance.
- Scenario generation: Macroeconomic scenarios, idiosyncratic scenarios, hypothetical events.
- Reverse stress testing: Identifying scenarios that lead to business failure.
- Aggregation of risks and enterprise-wide stress testing.
- **Case Study:** Developing a macroeconomic stress scenario for a large financial conglomerate and projecting its impact on capital and profitability.

Module 6: Advanced Stress Test Analytics and Interpretation

- Model validation for stress testing models: Backtesting, sensitivity analysis, benchmarking.
- P&L and balance sheet forecasting under stress.
- Integration of stress testing with capital planning and risk appetite.
- Sensitivity analysis and break-even analysis for stress scenarios.
- Communicating stress test results to stakeholders effectively.
- **Case Study:** Interpreting stress test results for a regional bank, identifying key vulnerabilities, and formulating actionable risk mitigation strategies.

Module 7: Operational Risk and Emerging Risks in Stress Testing

- Operational risk modeling techniques: Loss distribution approach (LDA), scenario analysis.
- Integrating operational risk into enterprise-wide stress testing.
- **Climate risk** and **ESG factors** in financial modeling and stress testing.
- **Cyber risk** and its implications for financial institutions.
- Geopolitical risks and their impact on financial stability.
- **Case Study:** Assessing the potential impact of a severe cyberattack scenario on a financial institution's operational resilience and financial health.

Module 8: Practical Applications and Future Trends

- Utilizing specialized software for financial risk modeling and stress testing (e.g., Python, R, MATLAB, commercial risk platforms).
- **Machine learning** and **AI** applications in risk prediction and stress testing.
- Regulatory trends and future directions in stress testing.
- Best practices for **risk governance** and reporting.
- Developing a comprehensive **risk management framework** for the future.
- **Case Study:** Building a simple credit risk stress testing model in Python, demonstrating data input, scenario application, and output visualization.

Training Methodology

This course employs a **blended learning approach** designed for maximum engagement and practical skill development:

- **Interactive Lectures:** Core concepts delivered through clear, concise presentations and expert insights.
- **Hands-on Workshops:** Practical exercises using real-world data and industry-standard tools (e.g., Excel, potentially introducing Python/R for specific modules).
- **Case Studies:** In-depth analysis of financial crisis events and successful risk management strategies, fostering critical thinking.
- **Group Discussions:** Collaborative learning and knowledge sharing among participants.
- **Q&A Sessions:** Opportunities for direct interaction with instructors and clarification of complex topics.
- **Practical Demonstrations:** Live demonstrations of modeling techniques and software applications.
- **Assessments:** Quizzes and a final project to reinforce learning and evaluate comprehension.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

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 Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

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