NSE Academy

IIM SIRMAUR
KNOWLEDGE . LEADERSHIP

Executive Program in

Quantitative Finance and Risk Mitigation

Jointly Offered by IIM Sirmaur and NSE Academy

ABOUT IIM SIRMAUR

Indian Institute of Management Sirmaur (IIM Sirmaur) is a Centrally Funded Institution of National Importance set up by the Government of India in 2015. IIM Sirmaur is one of the newer institutions of the IIM family in the country. As a premier institution, under the aegis of Ministry of Education, GoI, it aims to provide Management Education of high quality and promotes allied areas of knowledge and inter-disciplinary studies.

The Institute strives for the seamless integration of management education with local and global aspirations in an enabling environment. It supports that management education is not just about seeking the most competitive employment opportunities, but also about learning to serve socio-economic concerns through ethical and visionary corporate leadership. It strives to focus on indigenous areas and innovative practices, to develop sensitive corporate leaders and entrepreneurs of tomorrow.

PROGRAM DIRECTORS

Dr. Kiran Kumar Paidipati

Dr. Kiran Kumar Paidipati is working as an **Assistant Professor** in the Area of Decision Sciences at IIM Sirmaur. Prior to this, he served as an Assistant Professor in the Department of Statistics, Lady Shri Ram College for Women, **University of Delhi**, New Delhi. He also worked as a UGC Post-Doctoral Fellow in the **Department of Statistics, Pondicherry University**, Puducherry. As an academician, he has more than four years of teaching and research experience.

Dr. Paidipati completed his Ph.D. in Statistics from Pondicherry University in 2016 and M. Sc. Statistics from Sri Venkateswara University, Tirupati. His research areas include **Stochastic Modeling, Operations Research,** and **Data Science**. He is now working for the proposed international collaborations with **France** and the **BRICS** countries. He has taught Business Statistics, Probability Theory, Quantitative Analysis for Management, Financial Statistics, Programming in R and Advanced Analytics for graduates, post graduates and practitioners.

Dr. Manish Sarkhel

Dr. Manish Sarkhel is working as an **Assistant Professor** in the Area of **Operations and Supply Chain Management** at IIM Sirmaur. Prior to this, he has worked as an Assistant Professor at **Xavier Institute of Management**, Bhubaneswar (XIMB), **T.A. Pai Institute of Management (TAPMI) & Woxsen University**, Hyderabad. He has also been a visiting professor at **IIM Amritsar & XIMB**.

Dr. Manish Sarkhel has completed his **Ph.D** from **IIM Indore**. He has taught subjects such as Modelling with Spreadsheets, Project Management, Python Programming, Artificial Intelligence Using Python, Data Analytics Using Python & R, Financial Analytics Using Python, Excel, and Visual Analytics Using Tableau & Power BI. His research interests lie at the intersection of **Financial Market Interlinkages, Artificial Intelligence, Non-linear Programming and Networks**.

Dr. P. Sanjay

Dr. P. Sanjay is working as an **Associate Professor** in the Area of **Finance and Accounting** at IIM Sirmaur. Prior to joining academia, Dr. P. Sanjay has worked for companies and academic institutions in India, UK, USA and Japan in various capacities including up to the role of **Chief Financial Officer (CFO)**.

He holds a **Ph.D**. degree in Finance and an **M.Phil** from **London Business School** and is an alumnus of **London School of Economics and Political Science**. He has done his MBA from **University of Hawaii** as an **Asian Development Bank Fellow** and completed his **JMP** from **JAIMS (Japan)**. In addition, he is a qualified **CA, CS, Management (Cost) Accountant** and a **Lawyer**. His research and teaching interests lie in Financial Management, Mergers and Acquisitions, Valuation, Corporate Governance, Financial Accounting, Management Accounting and Spirituality and Management. He has presented his **research work** in conferences both **Nationally** and **Internationally**. He has done financial analysis for research works published in **Harvard Business Review**.

PROGRAM DESCRIPTION & OBJECTIVE

The *Executive Program in Quantitative Finance and Risk Mitigation* program is designed to provide participants with a comprehensive understanding of financial markets, quantitative analysis techniques, and risk management strategies. The program covers a range of topics, including financial statistics, financial derivatives, quantitative analysis, risk measurement, financial modeling, financial markets, instruments, and regulatory frameworks. Through a combination of theoretical knowledge and practical applications, participants will be able to hone the skills needed for quantification of the uncertainties, assess and manage financial risks effectively in various sectors.

PROGRAM OBJECTIVE

The primary objective of the *Executive Program in Quantitative Finance and Risk Mitigation* is to equip participants with the knowledge and skills necessary to excel in the field of quantitative finance and risk management.

The program aims to achieve the following objectives:

- **Develop a strong foundation in financial mathematics:** Participants will gain a solid understanding of mathematical concepts and techniques used in finance, enabling them to analyze and solve complex financial problems.
- **Master quantitative analysis techniques:** Participants will learn how to apply statistical and mathematical models to financial data, enabling them to make informed investment decisions and evaluate risk.
- **Understand and manage financial risks:** Participants will acquire knowledge about different types of financial risks and learn how to measure, monitor, and mitigate them effectively. They will explore risk management strategies and the use of financial derivatives for hedging purposes.
- **Gain expertise in financial modeling:** Participants will develop skills in building and implementing quantitative models to evaluate financial instruments and investment strategies. They will learn programming languages and tools used for financial modeling and simulation.
- **Acquire knowledge of financial markets and instruments:** Participants will gain insights into various financial markets and instruments, including stocks, bonds, options, futures, and foreign exchange. They will understand the characteristics of these instruments and their pricing mechanisms.
- **Understand the regulatory environment:** Participants will learn about the regulatory frameworks governing financial institutions and the impact of regulations on risk management practices. They will gain knowledge of key regulations and compliance requirements.

By the end of the program, participants will be well-equipped to analyze financial data, assess risks, and make informed decisions in the field of quantitative finance and risk mitigation. The program aims to prepare individuals for careers in banking, investment management, insurance, and corporate finance, where quantitative skills and risk management expertise are highly valued.

PROGRAM CONTENTS

Introduction Module
- Introduction to Programming in R
- Introduction to Programming in Python

Module 1 - Introduction of Finance
- Financial Markets and Products
- Financial Economics
- Fundamentals of Fixed Income Instruments
- Derivatives Products and Strategies
- Financial Institutions

Module 2 - Introduction to Financial Mathematics
- Basics of Linear Algebra and Calculus for Financial Markets

Module 3 - Introduction to Probability & Statistics
- Probability Theory
- Probability Distributions
- Descriptive and Inferential Statistics

Module 4 - Machine Learning for Quantitative Finance
- Introduction to Machine Learning
- Supervised Learning
- Regression Model
- Time Series Models
- Volatility Forecasting
- Unsupervised Learning

Module 5 - Stochastic Processes
- Basic Stochastic Processes for Derivatives and Option Pricing

Module 6 - Financial Modelling
- Model building
- Preparation of financial statements
- Working capital management
- NPV and IRR
- XIRR and MIRR functions
- Computation of WACC using CAPM approach
- Computation of FCFF and FCFE

Module 7 - Derivative Valuations
- Implementing Equity Options Pricing
- Implementing Currency Derivatives Pricing
- Implementing Interest Rate Derivatives Pricing

Module 8 - Risk Mitigation
- Introduction to Financial Risk Management
- Market Risk Management
- Credit Risk Management
- Operational Risk Management
- Liquidity Risk Management
- Investment Portfolio Management

CERTIFICATION & ALUMNI STATUS

Certificate of Completion

To qualify for the Certificate of completion the following criteria needs to be fulfilled:

(a) Each participant is expected to have an attendance record of 60% & above

(b) The participant should not have failed in more than two subjects/courses/modules

(c) Each participant is expected to have 40% marks in 4 out of the 8 modules

Participants who are unable to clear the evaluation criteria but have the requisite attendance will be awarded a 'Certificate of Participation'

Certificate Issued By : Indian Institute of Management Sirmaur (IIM Sirmaur)

Successful participants will also be accorded IIM Sirmaur Executive Alumni status

**This program does not confer any Degree/Diploma/Post-Graduate Certificate on the participant by IIM Sirmaur. It is a Management/Executive Development Program where a certificate is issued on successfully meeting the academic/performance requirements.*

PEDAGOGY

Executive Program in Quantitative Finance and Risk Mitigation is an online program that comprises a series of Online lectures, discussions, quizzes, assignments, projects, and online assessments. Our teaching and learning model encompasses the following:

- Blended technology-enabled education
- Eminent faculty
- Application-based pedagogy
- Collaborative learning approach
- Lectures and guest sessions by industry experts
- Experiential learning through practical & hands-on training

ELIGIBILITY CRITERIA

Graduates/Diploma (10+2+3) from a recognised university (UGC/ AICTE/ DEC/ AIU/ State Government/ Recognised international Universities) in any discipline.

WHO SHOULD ATTEND

- **Finance and Banking Professionals** – Those who aspire to grow into advanced analytical roles in Quantitative Analytics, Derivative Pricing and Valuation, Model Validation, Treasury, Financial Risk Management, Compliance, Risk Consulting etc.

- **IT Professionals** – Those who aspire to work in International Banks, Hedge Funds and other leading Financial Institutions in Quantitative Analytics or Financial Risk Management domains or aspiring to lead projects in IT companies for the above-mentioned domains.

- **Risk Management and Consulting Professionals** – Those who aspire to grow into senior roles by gaining deeper and wholesome knowledge in these fields particularly in the area of quantitative risk management.

- **Students** – Students from Engineering, Mathematics, Statistics, Economics, Finance, Commerce etc. backgrounds who aspire to work in International Banks, Hedge Funds, Consulting firms etc. in advanced analytical roles in Quantitative Analytics, Derivative Pricing and Valuation, Model Validation, Treasury, Financial Risk Management, Compliance, Risk Consulting etc.

Program Duration & Schedule

6 months | Online Live - Direct to Device

Saturdays - 02:00 PM to 05:00 PM

Program Fees

INR 80,000/- **plus GST, as applicable**

Details	Participants Fee
Admission Fee+	INR 10,000 + plus GST, as applicable
Program Fee++	INR 70,000 + plus GST, as applicable

+ At the time of enrollment
++ After the Confirmation into the program

For further information & corporate price, contact

programinfo@nse.co.in

Madhur: +91 85912 62151 | Gajendra: +91 84548 81917

For Scholarship and No Cost EMI please visit
https://www.ncfm-india.com/ORE/executive-program-quantitative-finance-risk-mitigation/

ABOUT NSE ACADEMY

NSE Academy Ltd. is a wholly-owned subsidiary of the National Stock Exchange of India Ltd. (NSEIL). NSE Academy enables the next generation of BFSI and FinTech professionals with industry-aligned skills through capacity building programs and certification courses, powered by an online examination and certification system. The courses are well-researched and carefully crafted with inputs from the industry professionals. NSE Academy works closely with reputed universities and institutions across India in building a competent workforce for the future of BFSI and FinTech. NSE Academy also promotes financial literacy as an essential life skill among youngsters - a contribution towards financial inclusion and wellbeing.