



THOMSON REUTERS

**POST GRADUATE PROGRAM IN
FINANCIAL ENGINEERING
(PGPFE)**

**Indian Institute of Quantitative Finance
And
Thomson Reuters**



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

Application of theories from:

- Financial economics
- Mathematics
- Statistics
- Econometrics
- Physics

Using complex tools and techniques of:

- numerical methods
- tools of engineering
- computer programming

to solve the problems of Investment Finance



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Modern investment finance is very much mathematical and statistical in nature : More of science
- Investments involve complex financial instruments – pricing, trading, risk analysis is complex.
- Complex trading or investment strategies



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Comprehensive training in these disciplines as applied in the context of finance.

- You take courses in :

- Financial Economics
- Financial Econometrics
- Financial mathematics
- Stochastic Calculus
- Numerical Techniques
- Advanced Monte Carlo Simulations
- Derivatives Modelling and Valuation
- Portfolio Theory
- Portfolio Optimization
- Performance Analysis
- Financial Risk Analysis



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- What is special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

● Imparts the theoretical knowledge as well as practical skills of :

- structuring, valuations and risk analysis of various complex financial instruments
 - quantitative trading techniques,
 - quantitative portfolio management and investment strategies
 - risk management technologies
- Practical experience in using financial software from Thomson Reuters



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

Students can specialize in either of the following two streams:

- **PGPFE (Investment Management)**

This stream focuses on specialist modules for developing skills for quantitative investment management

- **PGPFE (Risk Management)**

This stream focuses on specialist modules for developing skills for financial risk management



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

Graduates or Post Graduates who have good numerical abilities and want to make a career in quantitative investment finance or financial risk management.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

A) The Curriculum

(What is being delivered)

- Designed with the aim to deliver the skill-sets that are required and valued by employers in financial markets for jobs in core investment finance.
- At par with the best courses of this nature available across the global. The aim is to make you market-ready for core investment finance jobs.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

B) The Faculty (Who is delivering it)

- Taught by highly qualified financial engineering practitioners working with top global investment banks and financial institutions practitioners.
- Bring extensive practical hands-on implementation experience from the industry.
- This is an immense advantage that you get to learn from the leading practitioners both the theories and more importantly their practical applications. Which a pure academic course cannot teach.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

C) The Pedagogy

(How it is being delivered)

- Interactive sessions with extensive use of real world applications and exposure to models actually being used in the industry
- Hands-on model building during the classroom sessions and extensive practical assignments.
- Practical exposure in writing real world financial engineering applications in C++ / VBA.
- Financial applications of Thomson Reuters used by the practitioners



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

Course is divided into 4 parts:

- A) Foundation Module
- B) Core Modules
- C) Electives
- D) Dissertation



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- **Course Structure**
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

Foundation Module

- Intended to equip the students with the appropriate level of background knowledge in finance and carries no credit.
- Mandatory for students without any work experience and those who do not clear the Finance section of QAT. Students with MBA(Finance) or equivalent qualification may choose not to attend the lecture sessions, but they must clear the module exam.
- This module is optional for students with relevant work experience.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

Core Modules

- Compulsory for all students and consist of the modules specified in the syllabus.
- Common to both specializations
- Each module carries credit and students must score passing scores in each module.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

Electives

Depending on which stream the student wants to specialize :

Stream 1 - Investment Management

Stream 2 - Risk Management

Students have to compulsorily take all the modules for the specific stream

Transfer between the two streams is possible up till the start of the Electives modules .



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

Dissertation

Students are required to complete a dissertation carrying 15 credits.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

This is a 1-Year Part-time (week-end) program.

Conducted on

Saturdays : 4 PM to 8.30 PM

Sundays : 10 AM to 2.30 PM

Venue: Thomson Reuters Training Centre, Ballard Estate, Mumbai.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Dr. Binay Kumar Ray is AVP Quantitative Risk team with Nomura (formerly Lehman Brothers). A Quant professional with more than five years of experience in Modeling, Measurement and Management of Quantitative risk and analytical projects. He is the first person to start the Quant Credit Risk Team in India for the Lehman Brothers for their entire Asia-Pacific trading desk. Currently he is involved in developing a simulation based system for commodity derivatives. He is a Ph.D. (Econometrics) IGIDR, MBA ISB and BE.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Dr. M.P. Rajan, Assistant Professor, Mathematics, School of Mathematics, Indian Institute of Science Education & Research. He had worked with a tier-I Wall Street Investment Bank, Goldman Sachs as Quant Analyst. Previously he has been an Associate Professor in Financial Engineering and Mathematics with the Dept. of Mathematics, IIT-Guwahati where he headed the Quantitative Finance Research and Development Group. He holds a Ph.D. from Indian Institute of Technology Madras.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Dr. Bobby Dutta is the Head of Client Training, Asia Pacific Region for Thomson Reuters. He is a highly qualified Financial Expert holding Ph.D. (Finance), MBA, CFA, FRM, CQF degrees and having more than 16 years of work experience in the Finance domain. He has expertise in Quantitative Finance, Risk Management, Financial Markets, Project Finance, Project Management, Application development and Programming in VBA.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Dr. Joydeep Roy Assistant Professor (Physics) Heritage Institute of Technology where he teaches Statistical Mechanics, a field that forms the foundation of quantitative finance. He has been a Research Associate at Cornell University, New York. He holds a Ph.D. (Physics) Boston College, USA, MS (Physics) Boston College, USA and M.Sc. (Physics) IIT Kharagpur.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Kalyan Roy, Quantitative Analyst with Deep Value Technology, an innovative firm specializing in high-performance algorithmic trading strategy vehicles. He is a Ph.D. candidate in Statistics from Indiana University, Bloomington, U.S.A. He holds a Bachelor's degree in Statistics from the Indian Statistical Institute, Kolkata and a Master's degree in Statistics from the Indian Statistical Institute, Kolkata.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

● Abhijit Biswas is Director and Head of Product Development at Risk Infotech Solutions, one of India's premiere company in Portfolio Risk Management Software Products. Over ten years experience in research and development in Financial Engineering, Risk Modelling, Derivatives and Risk Management Software Systems Development. He is one of the pioneers of Risk Modelling Technologies in India. He is a consultant to major global financial institutions in risk management domain.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Anand Sabale, FRM is Partner at SPN Risk Solutions LLP. He has over six years of experience in risk management consulting, performance analytics and algorithmic trading. He has researched, traded and advised on statistical arbitrage trading. He is involved in risk management consulting and performance analytics for hedge funds and fund of hedge funds. Previously he had worked with Capital Metrics and Risk Solutions where he was involved in developing quantitative trading strategies and performance analytics for hedge funds. He is M.Tech. IIT Kanpur, BE and an FRM holder.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Amrendra Kumar is Senior Trader and Strategist for International Markets (Fixed Income, Commodities and Energy) at Centaurus Financial Services India, responsible for developing quantitative strategies for Trading & Risk Management and mentoring/managing new Traders. He holds an M.Sc. (Economics) IGIDR and Statistics for Financial Engineers from University of California, Berkely (Haas School of Business).



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Jyotishman Chatterjee is currently teaching at Heritage Institute of Technology. He has over sixteen years of work experience in the IT industry consulting for the BFSI segment. He holds an M. Tech. (Computer Science) Indian Statistical Institute, M.Stat. Indian Statistical Institute, B.Stat. Indian Statistical Institute.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Vivek Sharma is a consultant in quantitative trading strategies. He had worked as Associate Strategist with Goldman Sachs, New York where he was member of the investment banking strategies group and managed team responsible for risk infrastructure for the Leveraged Finance group. He worked on design and development of investment banking tools, standardization of financial models, building and deploying financial modeling and risk infrastructure.

He is Master of Computer Science, University of Virginia, B.Tech. (Computer Science) IIT Bombay, and CFA (AIMR) Level III Candidate.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

● Vikash Punglia works with one of the world's top risk management systems company as a risk analyst. He has around six years of experience in risk and business analytics. His prior engagements include working in the Trading Strategies and Algorithms team in a hedge fund, working with American Express bank as Manager - Quantitative Commercial Credit Risk Management. He is holds a BE, MBE, CFA, PRM, FRM, CAIA, CQF.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

● Vishal Singhi, is the Chief Manager – Treasury in a top private sector bank, where his responsibilities include structuring of Forex and interest rate derivative products, designing hedging strategies, risk analysis, pricing of path dependent exotic options, etc. He has over five years of experience in industry and also in teaching in business schools. He holds an MMS in Finance and Certificate in Financial Engineering.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Vimal Pathak, is currently the Chief Manager (Risk) and Head of Credit Risk Management in a top private sector bank. He has over nine years of experience in developing Risk Rating Models for large corporates and has implemented Basel II in leading banks and conducted trainings. Previously he was a Risk Management Consultant with Oracle Financial Services. He is a PGDBA, CAIIB-IBA, ISA-ICAI, FRM, and CA.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Ujwal Dinesh works with one of the top four Wall Street Investment Banks as Credit Analyst where he is responsible for structuring and recommending exposure for fund-based, non fund-based and derivative facilities. He has experience of statistical modelling of short-term interest rates in India. He has been a visiting faculty at leading business schools. He is an MBA from IIM-Calcutta, BE, FRM, CFA (Level-III candidate).



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Guruprasad Jambunathan has five years of experience in quantitative analysis & risk analysis with Irevna, CRISIL where he is responsible for undertaking advanced quantitative and risk-based analysis. He has been conducting training in relevant field for over three years. He holds a MBA Finance, degree in Statistics, FRM, CFA.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Sachin Shetty is a senior management professional with the National Stock Exchange of India Limited. He is involved in the model and system development of INDIA VIX, India's volatility index. He is also responsible for conceptualization and product design of repos in corporate bonds. Earlier he worked in Clearing Corporation of India Limited where he had been involved in the development of risk management systems for Forex Forward Swaps Trading System platform and Interest Rate Swaps. He holds an MMS (Finance) and FRM.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Anshuk Batra has vast experience in Risk Modelling, Risk Analytics, Financial Analytics, Statistical Modelling, and Consultancy. He has implemented Basel II and other Risk Management solutions for international banks. He is currently working with TCS wherein he is responsible for implementing Operational Risk, ALM, and Market Risk. Previously he worked with Oracle Financial Services as a consultant for implementing Basel II, Credit Risk, etc. Anshuk holds a B.Tech, Post Graduation in Banking Technology Management, FRM, and NCFM.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- Omkar Redkar is a credit risk analyst with a leading global bank. Previously he had worked with CRISIL, India's leading credit rating organization and Bank of America as Credit Analyst, Corporate Debt Products. He has over six years of experience. He is an MBA Finance (SIBM), BE and FRM.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- White-board
- Live Modelling on computer
- Labwork and assignments



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

This course prepares students for technically sophisticated jobs as

- quantitative investment managers
 - quantitative analysts
 - hedge fund managers
 - derivatives specialists
 - algorithmic traders
 - risk management professionals
- with
- investment banks, commercial banks
 - hedge funds, asset management companies
 - mutual funds, private equity firms
 - large broking houses
 - investment research and analytics firms
 - financial consultancy services
 - financial software companies, etc.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- IIQF has been engaged by top Wall Street Investment Banks for recruitment of personnel in their Quant and Risk Management teams.
- Placement assistance to all students who successfully complete the program.
- Students are assured of getting interview opportunities with the best of these institutions for core Quant Finance and Risk Management jobs.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

Admission to the course will be based on the performance in an entrance test to be held for this program, the **Quantitative Aptitude Test (QAT)**.



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

The admission test will assess the competency level of the candidate in the following three subjects:

- a) Finance 20% weightage
- b) Mathematics and Statistics 40% weightage
- c) Programming 40% weightage.

Duration: 2 Hours



- What is FE
- Why FE
- About PGPFE
- Specializations
- Who is it for
- Why is it special
- Course Structure
- Syllabus
- Faculty
- Pedagogy
- Career
- Placement
- Admission Process
- QAT

- The objective type questions will carry negative marks for wrong answers. Unanswered questions will not be scored.

- The evaluation of the admission test will be based on the aggregate score of the candidate in all the three subjects and will be percentile based.

- Candidate must achieve minimum passing scores in each of the two subjects of the test viz. Mathematics and Statistics and Programming.

- Passing in the Finance section of the admission test is not mandatory, those candidates who do not clear the finance section will have to compulsorily take the finance foundation module



THOMSON REUTERS

Thank You