



Rensselaer

QUANTITATIVE FINANCE WORKSHOP

December 17-20, 2009 at IGIDR, Mumbai, INDIA

JOINTLY CONDUCTED BY

Indira Gandhi Institute of Development Research (IGIDR), INDIA

[<http://www.igidr.ac.in>]

Ph: +91-22-2840 0919/20/21 Fax: +91-22-2840 2752/28416399

**Industrial and Management Engineering (IME) Department
Indian Institute Of Technology Kanpur, INDIA**

[<http://www.iitk.ac.in/ime>]

Ph: +91-512-259-7376

Fax: +91-512-259-7553

**Lally School of Management and Technology, Rensselaer
Polytechnic Institute, USA**

[<http://lallyschool.rpi.edu>]

Ph: +1-518-276-6565

Fax: +1-518-276-8661



Two premier institutes from India, Indira Gandhi Institute of Development Research (IGIDR), Mumbai and Indian Institute of Technology, Kanpur (IIT Kanpur), along with Rensselaer Polytechnic Institute, USA, one of the top ranking universities in USA, are conducting a four (4) day workshop in '*Quantitative Finance*' at IGIDR, Mumbai from **17th to 20th December 2009**.

Information about the Quantitative Finance Workshop

The 'Quantitative Finance' workshop is one of the collaborative activities the three institutes are launching this year. This collaborative workshop in the area of Quantitative Finance is carefully designed to guide the participants along the difficult terrain of Financial Mathematics to support their exploration and learning of the various theories of quantitative and mathematical finance, as well as obtain good hands-on learning experience with different tools used in finance. The workshop will explore different introductory aspects of quantitative finance, like (i) Asset Pricing Model (CAPM, APT, etc.); (ii) Derivative Pricing; (iii) Mutual Funds; (iv) Investment performance measures and Valuation; and (v) Risk Management. Emphasis will be on different quantitative and mathematical modelling techniques like, (i) Statistical estimation; (ii) Optimization; (ii) Time series analysis; (iv) Stochastic Calculus, as applicable to Quantitative Finance. The stress in the 16 sessions of the workshop will be to give a thorough and in-depth understanding of models and quantitative techniques to support problem solving in the exciting area of finance. The instructors of the workshop are reputed faculty members from IGIDR, IIT Kanpur, and RPI, who will deliver the material through exciting class lectures, innovative and up to date course materials, and hands on tutorials.

Who can attend this workshop

This workshop is specifically meant for dynamic professionals from industry, academically oriented post graduate and doctoral students, business faculty members who have an aptitude and interest in Financial Economics, Statistics, Financial Engineering and Management and Financial Mathematics. People in academia and industry or anyone keen to gain knowledge about quantitative finance and its application are strongly encouraged to apply for this exclusive and unique workshop.

With an excellent blend of theory as well as practical examples and a comprehensive course curriculum schedule, this workshop will undoubtedly be a very good learning experience for the participants. In all, around 40 participants will be selected from across the country, based on their vita, work experience, as well as reference letters (where applicable). The workshop built on the expertise of highly distinguished faculty members from the three collaborating institutions is an excellent opportunity for a superior learning experience. The applicant is advised that although there are no pre-requisites for this workshop, some elementary knowledge of mathematics and statistics will be very helpful in keeping pace with the material delivered in the workshop.

How to Apply

Please look for the Application Form on IGIDR website:
http://www.igidr.ac.in/qf_workshop/RegistrationForm.pdf

How to Reach IGIDR

Details are readily available at the IGIDR website: <http://www.igidr.ac.in/site.php>. For further information and queries, please get in touch at the following address:

Ms. Reshma Aguiar
Quantitative Finance Workshop
Indira Gandhi Institute of Development Research (IGIDR)
Gen. A.K.Vaidya Marg, Goregaon (E)
Mumbai - 400 065, INDIA
Email: QF_Workshop@igidr.ac.in
Ph: +91-22-2840 0919/20/2; Fax: +91-22-2840 2752/28416399

Information about the Institutes and Instructors

Indira Gandhi Institute of Development Research (IGDR), INDIA

Indira Gandhi Institute of Development Research (IGDR) which came into existence in 1987 is a very well known autonomous research body located in Mumbai which was founded by the Reserve Bank of India (RBI). IGDR is one of the few centers of higher learning in India that focuses on academic training and research from an interdisciplinary perspective. It is a deemed university and offers a Masters program in Economics and an integrated M.Phil/Ph.D. program in Development Studies. It started its Ph.D. program in 1990 and extended its curriculum to include M.Phil in 1996, followed by Masters in Economics in 2003. IGDR encourages students from a variety of disciplines like Economics, Mathematics, Science and Engineering and the institute also brings together researchers from diverse specializations to provide a holistic analyses of contemporary issues in areas like climate change, law and economics, money and finance, etc.

IGDR hosts several annual events such as the Annual Conference on Money and Finance, European Union sponsored Law and Economics Training Workshop, etc, and is also open to students from all around the world through various outreach activities. The Institute routinely carries out research funded by various international organizations like World Bank, USAID, etc. IGDR is well known for its biennial *India Development Report* that surveys contemporary economic issues.

The campus is as good as one can get in a sprawling metropolis such as Mumbai. It is surrounded by verdant green all around and birds chirping and is yet proximate to the financial center of India. IGDR offers the best of both worlds and welcomes you to take a trip to its campus. Located on a 14-acre hillock in Goregaon (East) and adjacent to the serene Borivli National Park, it is a 20 minutes drive from the airport. The residential campus, includes academic blocks with faculty and student offices, several seminar rooms equipped with the state-of-the-art interactive presentation technology, a 500 seat auditorium, a cafeteria and residential blocks for faculty, staff and students, including a fully equipped Guest House. The recreational facilities include a tennis court, jogger's path, swimming pool, table tennis, badminton court and a gymnasium. Academic life at IGDR is interspersed with vibrant cultural activities that reflect its national character.

Instructors

1. R. Krishnan: Dr. R. Krishnan has a Ph.D degree in Economics from the University of Bombay. His research and teaching interests include Time series Analysis, Econometrics and Statistics. His research papers have been published in journals such as *Journal of Development Economics* and *Journal of Policy Modeling*.
2. Subrata Sarkar: Subrata Sarkar is Professor at the Indira Gandhi Institute of Development Research, Mumbai, India. He received his Ph.D in Economics, with specialization in Econometrics and Industrial Organization, from the University of Southern California. His research interests are in the areas of corporate governance, corporate finance, risk and default modeling, and productivity and efficiency studies. He has been a visiting faculty at the University of Sydney and the University of Southern California. His research has been published in reputed journals like the *Journal of Economics and Management Strategy*; *Journal of Money, Credit and Banking*; *Review of International Finance*; *Journal of Accounting, Auditing and Finance*; *Journal of Comparative Economics*. He is one of the founding editors of the journal *Macroeconomics and Finance in Emerging Market Economies* published by Routledge.
3. Susan Thomas: Susan Thomas holds degrees in civil engineering and economics from IIT, Bombay and University of Southern California, Los Angeles, respectively. She is a

faculty member at the Indira Gandhi Institute for Development Research, Bombay. Her research has been in financial econometrics, specifically modelling volatility of prices, and analysing aspects of market microstructure in Indian financial markets. She has worked on models for the Indian zero coupon yield curve, bond index construction and probability of default for Indian firms. She is a co-author of "*India's Financial Markets: An insider's guide to how market's work*". Her work can be accessed at <http://www.igidr.ac.in/~susant>.

Indian Institute of Technology Kanpur (IIT Kanpur), INDIA

Indian Institute of Technology, Kanpur (IIT Kanpur) is one of the premier technical institutions established in 1959 by the Government of India with the collaboration of a consortium of nine universities from the USA. From the day of its inception, the aim of the institute has been to provide meaningful education, to conduct original research of the highest standard and to provide leadership for the growth of this country. At present IIT Kanpur has a sprawling residential campus of 420 acres with about 2500 undergraduate and 1500 postgraduate students, 330 faculty members and more than 1500 supporting staff. The institute has a well designed faculty building, fully equipped classrooms, seminar and conference rooms, computer science building, biological sciences building, residential quarters for the faculty & staff members, hostels for the students, an excellent library, etc. The presence of lush green trees, manicured lawns, wide roads make the campus picturesque and well endowed. IIT Kanpur has always strived to develop itself into an institution of excellence in education and research in consonance with the contemporary and future needs of India. The institute has made special efforts to recruit talented faculty on a worldwide basis and admits students in the different programs from all over the country by a very careful selection process. In addition to offering formal undergraduate, post-graduate and Ph.D. programs, the institute has also been involved in continuing education and research & development in areas of value to both the industry and the society. The vision of the institute is to emerge as an international centre of excellence in all facets of technical and management education by being a melting pot of academia, industry and research, but at the same time being rooted in Indian ethos and societal values.

The Industrial and Management Engineering (IME) department at IIT Kanpur started in 1974. It has three separate programs, which are Ph.D, M.Tech and MBA. For the Ph.D. and M.Tech programs the main thrust areas of research and teaching are in Operations Research (OR), Operations Management (OM), Flexible Manufacturing Systems (FMS), etc. In 2000 the IME department started the MBA program, which, under the aegis of IIT Kanpur, has fast blossomed into a successful program where the emphasis is always on building the quantitative skills of the students along with their knowledge in other areas of management. IME has a very vibrant faculty, who are deeply dedicated into research and teaching. The vision of the department is to define itself as a leading management institute of the twenty-first century so that it is able to educate the leaders of a technologically driven world for the coming decades. For that, the IME department is geared up to impart the best education needed to the students as well as to the industry in such a way that synergy is attained within the requirements of industry, government and the core beliefs of IIT Kanpur.

Instructors

1. **Ashok K. Mittal**: Prof. Mittal has a B.Tech and M.Tech from IIT Kharagpur after which he obtained his Ph.D. from Case Western Reserve University. Prof. Mittal has over thirty years of academic experience at IIT Kanpur, AIT Bangkok and Northwestern University. Prof. Mittal has published his research in journals such as *IIE Transactions*, *International Journal of Logistics Systems and Management*, *Operations Research Letters*, etc. He has also been the head of the IME department, Dean Planning and Resource Generation IIT Kanpur and Dean Research and Development IIT Kanpur. He was until recently the President of OR Society of India and Vice President of Quality Circle Forum of India.

2. B. V. Phani: Dr. B.V.Phani who is an Associate Professor, holds a Ph.D. in finance with specialization in both MIS and Finance from IIM Calcutta and is currently a faculty of finance at IIT Kanpur. He holds additional responsibility as Coordinator of SIDBI Innovation and Incubation Centre at IIT Kanpur. He also held various positions in the industry and has been a CEO of BCIT Ltd. before coming to academics. He also has consulted for various organizations in the country over the last 10 years. His teaching and research interests are in the areas of Financial Intermediation, Corporate Finance, Valuation & Real Options, Financial Intermediaries, Credit Risk Modeling, etc.
3. Raghu N. Sengupta: Dr. Sengupta completed his B.E from BIT, Mesra and his FPM (Ph.D.) from IIM Calcutta with a specialization in OM and Finance. His research interests are in the areas of Sequential Analysis, Statistical & Mathematical Reliability, Financial Risk Analysis and use of Meta-heuristic techniques for optimization. He research work has been published in journals like *Sequential Analysis*, *Journal of Applied Statistics*, *European Journal of Operational Research*, etc. At IIT Kanpur he is an Associate Professor and teaches the following courses, Probability & Statistics, Financial Risks Analysis, Portfolio Management and Derivatives.

Rensselaer Polytechnic Institute (RPI), USA

Rensselaer Polytechnic Institute, founded in 1824 in Troy, New York (USA), is the nation's oldest technological university. The university offers bachelors, masters, and doctoral degrees in engineering, the sciences, information technology, architecture, management, and the humanities & social sciences. The Institute's programs serve undergraduates, graduate students, and working professionals around the world. Rensselaer faculty members are known for pre-eminence in research conducted in a wide range of fields, with particular emphasis in biotechnology, nanotechnology, information technology, and the media arts and technology. The institute is well known for its success in the transfer of technology from the laboratory to the marketplace so that new discoveries and inventions benefit human life, protect the environment, and strengthen economic development.

The Lally School of Management and Technology was founded in 1963 as an integral part of Rensselaer Polytechnic Institute. Building on a heritage of more than 175 years of leadership in science and engineering, Rensselaer's Lally School develops technologically-savvy, entrepreneurial business leaders who can initiate and guide innovation for commercial success in today's challenging global marketplace. All programs enable the next generation of business leaders to combine their passion for technology with the management ability to succeed in today's challenging global marketplace. The School offers BS, MS, and MBA programs consistent with the School's mission to develop technically sophisticated business leaders who are prepared to guide their organizations in the integration of technology for new products, new businesses, and new systems. The School's thriving doctoral program is built around rigor and relevance in intellectual contributions and business practices. The cutting-edge research and programs offered by the Lally School faculty, as well as the diversity in its student body increasingly reflect Rensselaer's emergence as a world-class research university with global reach and impact.

Finance at the Lally School is consistent with the School's quantitative, analytical and technology-savvy orientation of education. The School's thrust in Finance and financial research is driven by its International Center for Financial Research, while it conducts its training and pedagogy in Finance through an MS degree program in Financial Engineering and Risk Analytics (FERA). The MS in FERA program utilizes expertise of faculty members beyond the business school, from Mathematics, Decision Sciences, and Computer Science departments at RPI for delivering rigorous training in the field.

Instructors

1. Aparna Gupta (Assistant Professor of Quantitative Finance): Professor Gupta teaches managerial finance, investments, risk management and financial simulations at the Lally School of Management and Technology. Professor Gupta's research interests are in financial decision support, risk management, and financial engineering. Her research work has been published in reputed journals, such as, *Journal of Computational Finance*, *Insurance: Mathematics and Economics*, *Annals of Operations Research*, *Computational Optimization and Applications*, etc. Professor Gupta has an M.Sc. (Integrated) in Mathematics from IIT Kanpur, and she received her Ph.D. from Stanford University. Professor Gupta serves as a reviewer for several business, finance and management science journals, and is the Vice-Chair of the Financial Services section of the Institute for Operations Research and Management Science (INFORMS). Professor Gupta is also a member of AFA, FMA, IAFE, INFORMS, and IEEE.
2. Iftexhar Hasan (Cary L. Wellington Professor, Director of the International Center for Financial Research): Professor Hasan teaches corporate finance, financial institutions and markets, and empirical issues in research. He has held visiting faculty positions in several European and American universities including the University of Rome, Robert Schuman University at Strasbourg, EPFL at Lausanne, Carlos III at Madrid, and the Stern School of Business. He has been a consultant for the World Bank, United Nations, Italian Deposit Insurance Corporation and a number of other foreign central banks and regulatory authorities. Professor Hasan focuses his research on international banking issues, the economics of stock exchanges, privatizations in emerging markets, and new ventures. He has published in reputed journals such as the *Journal of Financial Economics*, *Journal of Business*, *Journal of Monetary Economics*, *Journal of International Money and Finance*, *Journal of Money Credit and Banking*, *Journal of Banking and Finance*, etc. Professor Hasan is a co-author of several books and edited volumes including the widely-cited book *Quantitative Methods for Finance and Investment*. Professor Hasan serves on the editorial boards of a number of journals such as the *Journal of Money Credit and Banking*, the *Journal of Banking and Finance*, and the *Journal of International Money and Finance* and serves as the Editor of the *Journal of Financial Stability*.
3. John Teall: Visiting Professor of Finance: John Teall is currently Visiting Professor of Finance at RPI and Adjunct Professor of Finance at New York University. He has previously served on the faculties of Pace University, Fordham University, Dublin City University, etc. He is the author of the book *Financial Market Analytics* published by the Quorum Press, *Governance and the Market for Corporate Control* published by Routledge Press and coauthor of *Quantitative Methods for Finance and Investments* published by Blackwell Publishing. Dr. Teall obtained his Ph.D. from New York University and is a former member of the American Stock Exchange. Professor Teall's primary research activities have been concentrated in the area of corporate control, though his interests in applications of quantitative technique have led to other research topics as well.