

# MATHEMATICS

## IIT KANPUR



**Placement Brochure**

**2024-25**

**MATHEMATICS**

**Department of Mathematics and Statistics**

# Message from the HOD

-- Prof. Mohua Banerjee

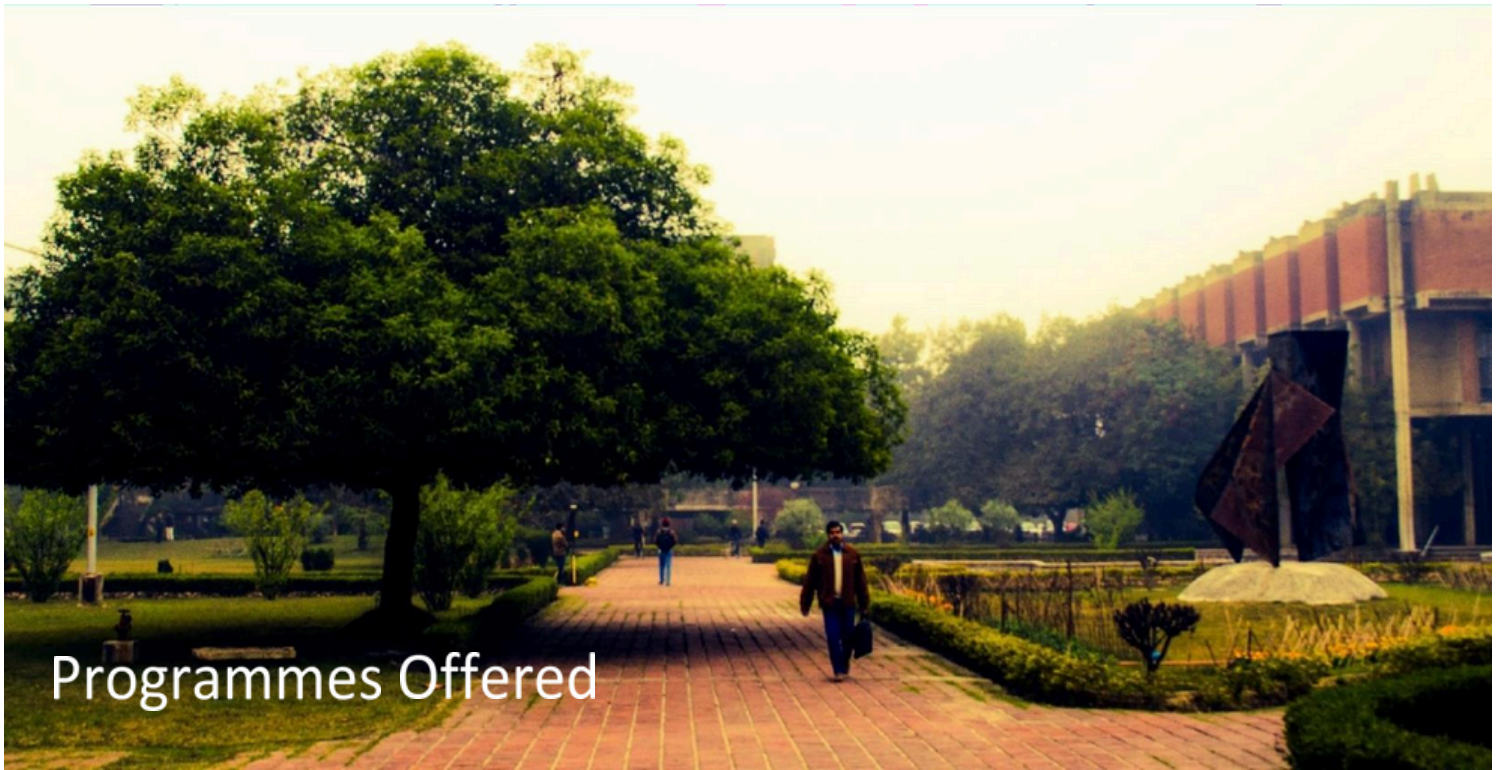
The Department of Mathematics and Statistics at IIT Kanpur came into existence in 1960. Over the years, it has evolved as one of the premier departments in the country, making a remarkable contribution in adding to the lot of well-trained, bright mathematicians and statisticians in the country and abroad. In the 2024 QS world university rankings, IIT Kanpur is rated among the top two in the country in the areas of mathematics and data science. In the recent JEE entrance, our department is positioned just after the department of Computer Science & Engineering in the Institute, in terms of opening and closing ranks. The department occupies a unique position in the Institute, offering several popular academic programs: 2 BS-MS programs (in Mathematics & Scientific Computing and Statistics & Data Science), 2 MSc 2-year programs (in Mathematics and Statistics), and 2 PhD programs (in Mathematics and Statistics). Trained by faculty who are leading experts in their fields, the students of these programs get well-set to make a mark in academia as well as industry. Past placement records of our students and achievements by our alumni provide ample evidence in this regard. On behalf of the department, I heartily welcome the companies to the campus recruitment of IIT Kanpur.



The courses offered here are taken by professors who are leading researchers in that field. The courses being based on pragmatism, utility and function, not only enrich the theoretical knowledge but introduces them to practical aspects through course projects which are often done in groups forging team spirit.

With a strong focus on research, through Undergraduate Project (For BS Students) and MS Project (For BS-MS dual degree students), the students are encouraged to tackle theoretical as well as industrial problems transforming them into motivated individuals who can be great asset for any organization, be it academic, R&D, software, analytics or finance.





## Programmes Offered

### Bachelor of Sciences (BS)

A 4-years program started from 2011 which allows admission through the Joint Entrance Examination (JEE). It focuses directly on the departmental courses enabling students to concentrate on the theory and applications of mathematics and statistics. The enrolled students also have an option to do a minor in any other department like Economics, MBA or Computer Sciences.

### Bachelor of Sciences-Master of Sciences (BS-MS) Dual Degree

The 4-years BS program in Mathematics and Scientific Computing has replaced the 5-year integrated MSc program which was running since 1960's. However, for a more thorough knowledge, the students have an option to do masters also which will result in 5-year BS-MS dual program. Apart from their main degree, they also have an option to do a minor in another field or department of their interest.

### Master of Sciences (MSc) 2 Year

This 2-year course takes admission from Joint Admission Test for MSc (JAM) in two separate streams of Mathematics and Statistics. This program focuses more on the pure subjects of the streams and lays a good foundation for doing impactful PHD's from abroad.

## Mathematics

Real analysis  
Discrete Mathematics  
Introduction to Fourier series

Linear Algebra  
Differential Equation  
Multivariable Calculus

Topology  
Abstract Algebra  
Probability Theory

## Applied Statistics

Statistical Simulation and Data Analytics  
Applied Stochastic Process  
Mathematical Modelling  
Matrix Theory and Linear Estimation

Probability and Statistics  
Statistical Inference  
Time Series Analysis  
Robust Statistical Methods

Regression Analysis  
Analysis of Variance  
Sample Survey  
Design of Experiment

## Computer Sciences

C Programming Language  
Natural Language Processing  
Game Theory and Mechanism design  
Information Retrieval

Machine Learning  
Data Structures and Algorithms  
Principles of Database System  
Randomized Algorithm

Data Mining  
Computer Networks  
Theory of Computation  
Big Data

## Economics and Finance

Microeconomics  
International Economics  
Securities, Derivatives and Portfolio  
Management

Mathematical Finance  
Financial Economics  
Financial Management

Money and Banking  
Econometrics  
Macroeconomics

## Inter-disciplinary Courses

Operation Research and Management  
Management in Financial Systems  
International Business Management

Quantitative Decision Models  
Cost and Financial Accounting  
Property Management

Game theory  
Manufacturing Strategy  
Combinatorial Optimization

# Internships

Over the summers, students undertake internships, either in the industry or in leading academic institutions. This takes education outside the classroom into the offices of corporate or the rooms of the research labs. In previous years students have done internships in a lot of diverse organizations and fields which has helped them gain a lot of academic as well as corporate experience.

## Internship profiles of students from Department of Mathematics and Statistics:

### FOREIGN UNIVERSITIES

University of Clermont-Ferrand, France  
Jean Monnet University, France  
University College, London  
University of Wisconsin-Madison, U.S  
IE Business School, Spain  
University of British Columbia, Okanagan  
Johns Hopkins University, U.S  
University of Waterloo, Canada  
University of Alberta, Canada  
Univ. of Manitoba, Winnipeg, Canada

### INDIAN UNIVERSITIES/INSTITUTES

ISI, Chennai  
ISI, Bangalore  
IISC, Bangalore  
IISER, Mohali  
NISER, Bhubaneswar  
HCRI, Allahabad  
NNMCB- IISER PUNE  
IMSc, Chennai

### FELLOWSHIP

MITACS  
IAS(Indian Academy of Sciences)  
INSPIRE  
NMCB  
NBHM

### COMPANIES

Deutsche Bank  
Adobe  
Siemens Bangalore  
American Express  
Flipkart  
Fuzzy Logix  
Goldman Sachs

Edelweiss Financial Services  
Kiwi Capital  
Adoro Marketplace  
Adobe Research  
NoBroker  
EXL Services  
Fractal Analytics

Credit Suisse  
Reliance Jio  
Airbus group  
Samsung R&D  
Pervasive  
IBM India Research Lab  
Remedoc

### PROFILES

Data Scientist  
Data Analyst  
Strategic Analyst  
Research Intern  
Product Development  
Corporate Finance

Machine Learning  
Big Data Analytics  
Cryptography  
Consultancy  
Software Developer  
Risk Management

Decision Model Analysis  
Programming Data  
Analytics Machine  
Learning Social Network  
Analysis

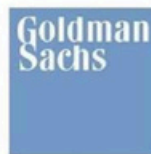
# Distinguished Faculty

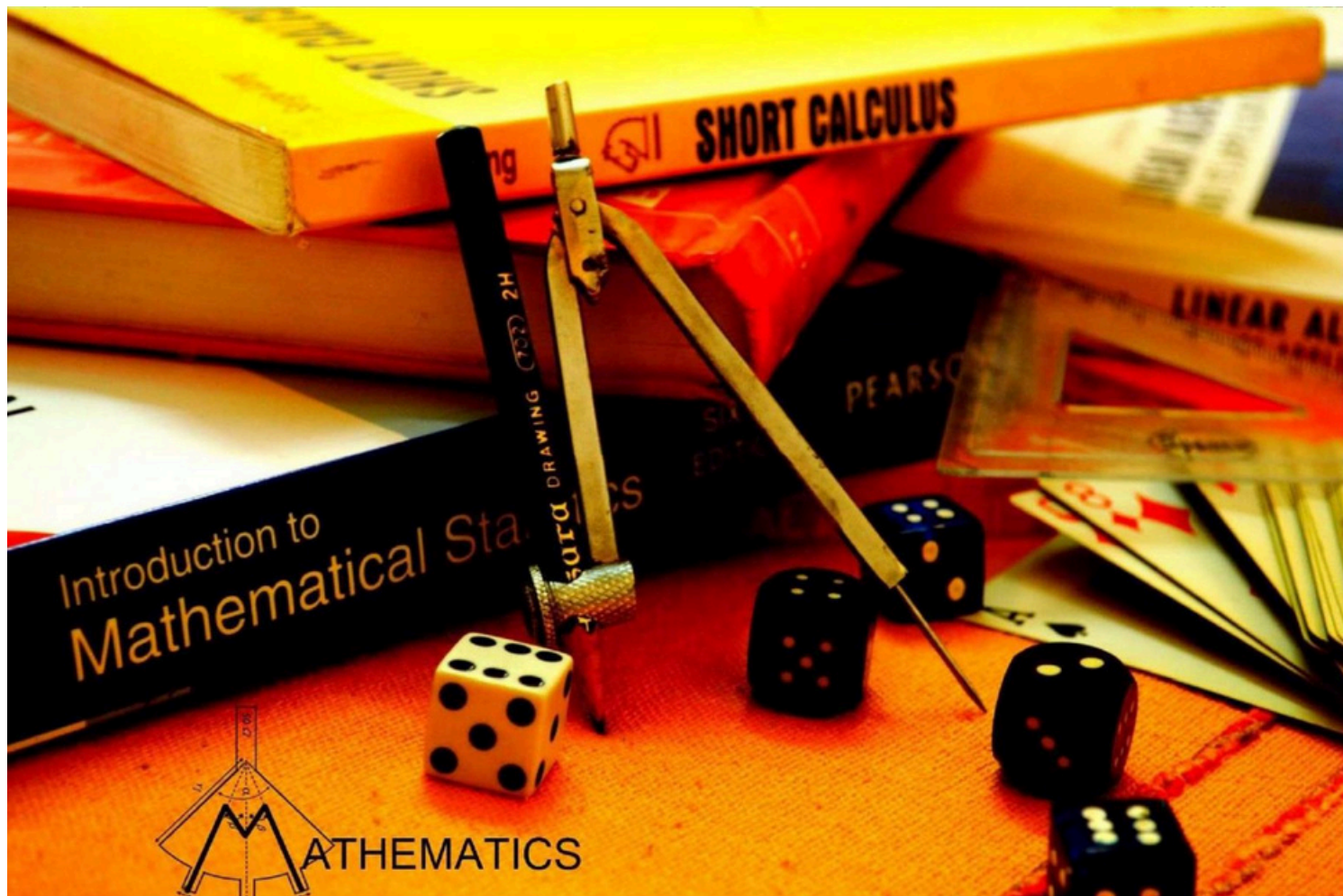
The department takes pride of the distinguished faculty that enriches the deep roots of education in the institute. Here is the list of faculty members in our department.

Anand A (Phd, university of Minnesota)  
Bahuguna D (phd, IIT Kanpur)  
Bakshi Keshab Chandra (Phd, IMSc. Chennai)  
Bal Kaushik (PhD, UPPA, France)  
Banerjee Malay (PhD, University of Calcutta)  
Banerjee Mohua (PhD, University of Calcutta)  
Bhar Suprio (Ph.D, Indian Statistical Institute, Bangalore)  
Biswas Mrinmay (Ph.D, IISER Kolkata)  
Bonala Narasimha Chary (PhD, Chennai Mathematical Institute, Chennai)  
Chandel Vikramjeet Singh (Ph.D, Indian Institute of Science, Bengaluru)  
Chavan Sameer (PhD, University of Pune)  
Chowdhury Indranil (PhD, TIFR - CAM, Bengaluru)  
Dar Aparna (PhD, S.U.N.Y Stony Brook, USA)  
Dhar Subhra Shankar (PhD, ISI, Calcutta)  
Dutta Subhajeet (PhD, ISI, Kolkata)  
Ganguly Arijit (PhD, TIFR Mumbai)  
Ghorai S (PhD, Leeds, UK)  
Guin Satyajeet (Phd, IMSc ,Chennai)  
  
HAZRA, ARNAB (PhD, North Carolina State University, Raleigh, US)  
JHA, SOMNATH (PhD, Tata Institute of Fundamental Research, Mumbai)  
KUBER, AMIT (PhD, University of Manchester, UK)  
KUNDU, DEBASIS (PhD, Pennsylvania State University)  
Kumar, Ashutosh (PhD: University of Wisconsin Madison)  
MALOO, ALOK KUMAR (PhD, TIFR , Mumbai)  
MANDAL, ASHIS (PhD, ISI, Kolkata)  
MISRA, NEERAJ (PhD, IIT Kanpur)  
MITRA, AMIT (PhD, IIT Kanpur)  
MITRA, SHARMISTHA (PhD, IIT Kanpur)

Mukhopadhyay, Minerva (PhD, Indian Statistical Institute, Kolkata)  
MOHANTY, PARASAR (PhD, IIT Kanpur)  
MUTHUKUMAR, P. (PhD, Indian Statistical Institute, Chennai)  
MUTHUKUMAR, T. (PhD, Institute of Mathematical Sciences)  
Nadimpalli Santosh  
NILAKANTAN, NANDINI (PhD, IISC, Bangalore)  
PAL, A. (PhD, Indian, Statistical Institute, Kolkata)  
PATNAIK, S. (PhD, University of Cincinnati, USA)  
PATTANAYAK, S. K. (PhD, CMI, Chennai)  
RATHISH KUMAR, B.V. (PhD, SSSIHL, prasanthi nilayam)  
RAWAT, RAMA (PhD, ISI, Bangalore)  
  
ROY, PROSENJIT (PhD, University of Zurich, Switzerland)  
SADHUKHAN, SOUMYARUP (PhD, Indian Statistical Institute, Kolkata)  
SAMUEL, PREENA (PhD, IMSc, Chennai)  
SANKI, BIDYUT (PhD, Indian Institute of Science, Bangalore)  
SEN D. (PhD, ISI, Kolkata)  
SHALABH (PhD, University of Lucknow)  
SHARMA, SACHIN (PhD, IMSc, Chennai)  
SHUNMUGARAJ, P. (PhD, IIT Bombay)  
SHEKHAR, SUDHANSHU (PhD, TIFR, Mumbai)  
Singh, Saurabh Kumar ( PhD, TIFR, Mumbai)  
Singh, Satya Prakash (PhD, IIT Bombay)  
Singla, Pooja ( PhD, The Institute of Mathematical Sciences, Chennai)  
THAKUR, AJAY SINGH (Ph.D, The Institute of Mathematical Sciences, Chennai)  
Vats, Dootika ( PhD: University of Minnesota)







## Contact Us

Faculty Co-ordinator

Prof. Arnab Hazra

[ahazra@iitk.ac.in](mailto:ahazra@iitk.ac.in)



Department Placement Coordinator

Abhinav Mishra

91-8948869374

[abhinavm23@iitk.ac.in](mailto:abhinavm23@iitk.ac.in)



Please reach out to us or the Students Placement Office (SPO) at [spo@iitk.ac.in](mailto:spo@iitk.ac.in)