

# MATHEMATICS & STATISTICS

## IIT KANPUR



### Placement Brochure 2023 – 24

**Department of Mathematics and Statistics**

# Message from the Faculty

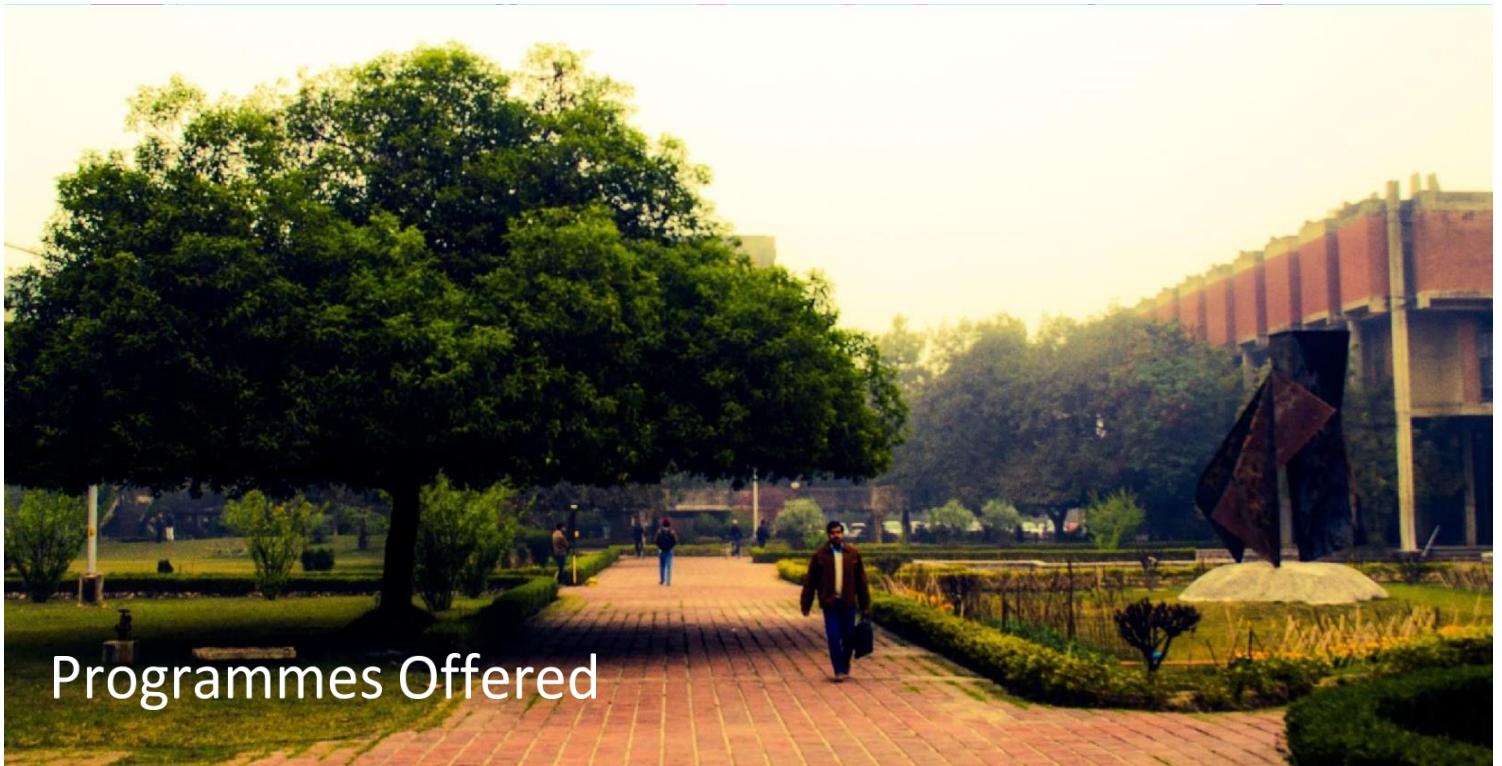
Established in 1959 as one of the first Indian Institutes of Technology, the institute was created with the assistance of a consortium of nine leading US research universities as part of the Kanpur Indo-American Program (KIAP).

The Department of Mathematics, since its inception in 1959, has emerged as a national center for excellence in mathematics and allied areas, in terms of research, teaching and mentoring of students. It is one of the oldest research hubs for mathematics in the country. The department has churned out batches of motivated and dedicated students with the commitment and competence to pursue careers in academia and industry in the areas of mathematics, computer science and finance. The rigor of pure mathematics coupled with the most flexible elective driven structure in the institute gives the students an ample opportunity to their skill in varied fields of interests ranging from data analytics, computational mathematics, optimization, parallel computing to statistics, finance and other applied fields.



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.

“The professors are experienced and accessible. They try to give additional help outside the classroom which really helps the students in getting hold of the subjects.”

- Prof. Amit Mitra, Department of Mathematics and Statistics, IIT Kanpur

## 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. The graduating batch of 2019-20 has 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, of graduating batch of 2018-19, 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. There are a total of 39 Professors, Associate Professors and Assistant Professors whose research interests provide a lot of in pure as well as applied Mathematics and Statistics. Moreover, the **Faculty: Student Ratio is 0.9:1** for every batch.

- |   |  |
|---|--|
| Akash Anand. (PhD, University of Minnesota)                 | Roy, Prosenjit (PhD, University of Zurich, Switzerland)  |
| Santham, G. (PhD, TIFR, Mumbai)                             | Maloo, Alok Kumar (PhD, TIFR, Mumbai)                    |
| Arijit Ganguly (PhD, TIFR Mumbai)                           | Mandal, Ashis (PhD, ISI, Kolkata)                        |
| Bidyut sanki (PhD, Indian Institute of Science, Bangalore)  | Misra, Neeraj (PhD, IIT Kanpur)                          |
| D Bahuguna. (PhD, IIT Kanpur)                               | Mitra, Amit (PhD, IIT Kanpur)                            |
| Kaushik Bal (PhD, UPPA, France)                             | Mitra, Sharmistha (PhD, IIT Kanpur)                      |
| Malay Banerjee (PhD, University of Calcutta)                | Mukhopadhyay, Minerva (PhD, ISI Kolkata)                 |
| Samuel Preena (PhD, IMSc, Chennai)                          | Mohanty, Parasar (PhD, IIT Kanpur)                       |
| Mohua Banerjee (PhD, University of Calcutta)                | Muthukumar, T. (PhD, Institute of Mathematical Sciences) |
| Suprio Bhar (PhD, Indian Statistical Institute, Bangalore)  | Nilakantan, Nandini (PhD, IISc, Bangalore)               |
| Sameer Chavan (PhD, University of Pune)                     | Pal, A. (PhD, Indian, Statistical Institute, Kolkata)    |
| Aparna Dar (PhD, S.U.N.Y StonyBrook, USA)                   | Patnaik, S. (PhD, University of Cincinnati, USA)         |
| Debraj Das (PhD, North Carolina State University, USA)      | Pattanayak, S. K. (PhD, CMI, Chennai)                    |
| Subhra Sankar Dhar (PhD, ISI, Calcutta)                     | Rawat, Rama (PhD, ISI, Bangalore)                        |
| Subhajit Dutta (PhD, ISI, Kolkata)                          | Rathish Kumar, B.v. (PhD, SSIBL, Prasantha Nilayam)      |
| Pravir Dutt (University of California, Los Angeles)         | Sen D. (PhD, Isi, Kolkata)                               |
| Ghorai S. (PhD, Leeds, UK)                                  | Shalabh (PhD, University of Lucknow)                     |
| Satyajit Guin (PhD, IMSc, Chennai)                          | Sharma, Sachin (PhD, IMSC Chennai)                       |
| Somnath Jha (PhD, TIFR Mumbai)                              | Shunmugaraj, P. (PhD, IIT Bombay)                        |
| Amit Kuber(PhD, University of Manchester, UK)               | Sinha, Prawal (PhD, IIT Bombay)                          |
| Debais Kundu (PhD, Pennsylvania State University)           | Shekhar, Sudhanshu (PhD, TIFR, Mumbai)                   |
| Arbind Kumar Lal (PhD, Indian Statistical Institute, Delhi) | Thakur, Ajay Singh (PhD, TIMS, Chennai)                  |

PAST  
RECRUITERS



McKinsey&Company



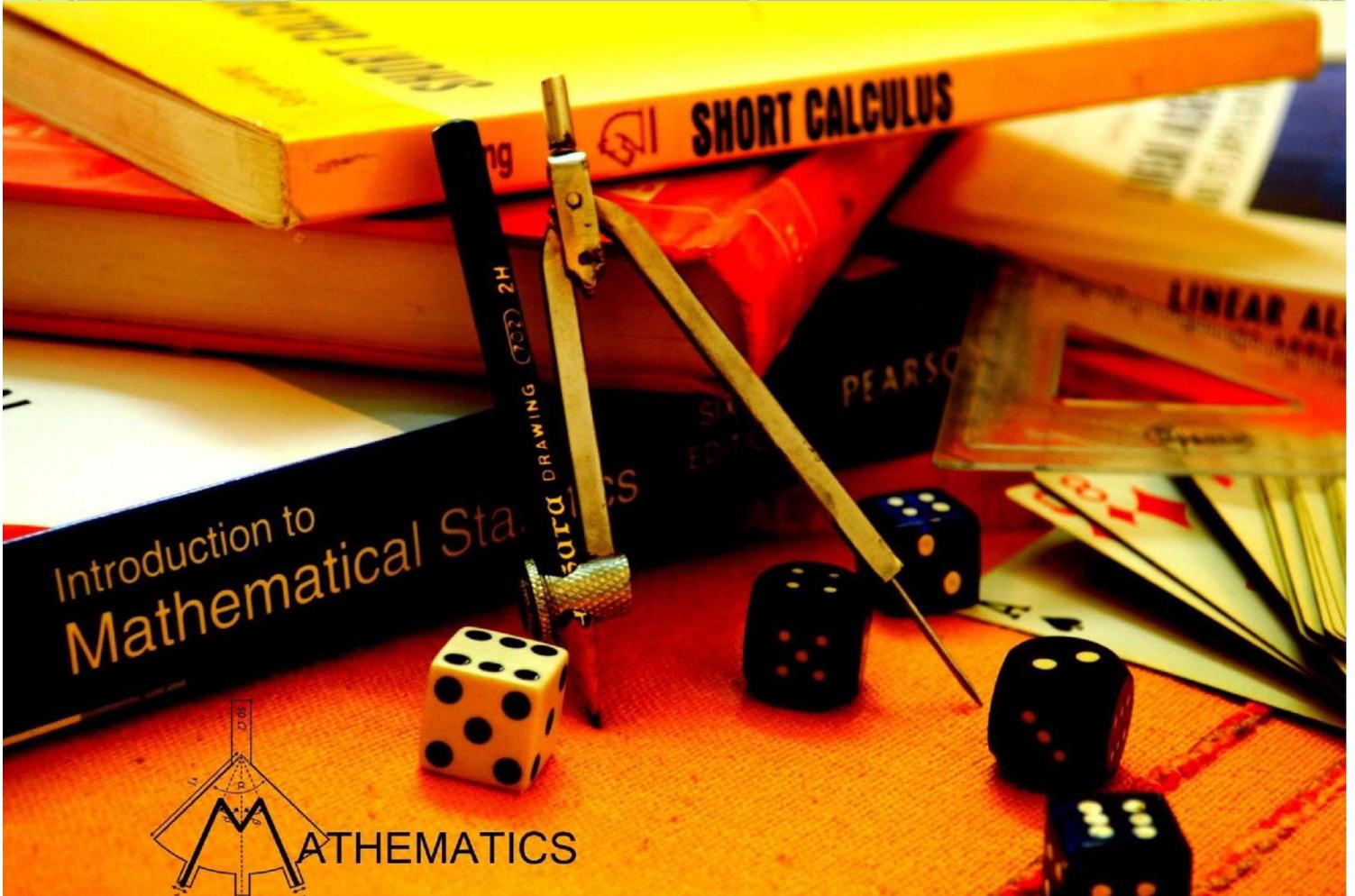
Deutsche Bank



ASPECT RATIO  
Intelligence From Data



ERICSSON



## Contact Us

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