Indian Institute of Technology, Kanpur
Department of Mathematics & Statistics

PLACEMENT BROCHURE 2025-26

Master of Science in Statistics &
Bachelor of Science in Statistics
and Data Science

Website: https://www.iitk.ac.in/math
Phone: +91-512-259 4433

Homepage
Department of Mathematics & Statistics

Homepage,
Students' Placement Office

Welcome Message

The Department of Mathematics and Statistics at IIT Kanpur, established in 1960, is a leading center for education and research in mathematics, statistics, and data science. Our programs, including the BS in Statistics and Data Science and the MSc in Statistics, offer rigorous training in both theory and applications, preparing students for impactful careers in academia, industry, and research.

Our faculty are internationally recognized experts actively engaged in cutting-edge research, and they bring this expertise into the classroom. The department fosters a vibrant academic environment through regular seminars, workshops, and collaborative projects.

Prof. Akash Anand
Head of the Department
head_math@iitk.ac.in

Our graduates have consistently performed well in placements and are highly sought after by top institutions and organisations worldwide.

> *We warmly welcome recruiters to connect with our students through the campus placement program at IIT Kanpur.*

About the Department

The Department of Mathematics & Statistics at IIT Kanpur, established in 1960, is a leading centre for both pure and applied mathematical research. It combines deep theoretical foundations with practical applications in statistics, machine learning, and data science. The department boasts distinguished faculty, active research output, and strong global collaborations, especially in Probability and Statistics. It ranked 36th globally in AI & Data Science in 2024, reflecting its excellence in modern computational fields. Offering programs at all academic levels, it prepares students for careers in academia, research, and industry. Its curriculum is supported by interdisciplinary projects and strong industry ties.

▮ About the Programs

A. BS in Statistics and Data Science:

Program Objective: Prepare students with a strong mathematical foundation, computational proficiency, and statistical insight, enabling them to pursue careers in analytics or advanced study.

Core Domains: Blend of Statistics, Data Science, and Computation, with theoretical and applied coursework.

Experiential Focus: Includes Data Science Labs, real-world data projects, and optional industrial internships up to 36–45 credits.

Industry Relevance: Students engage in guest lectures and challenges in areas such as health, finance, social media, NLP, and image/signal data processing.

B. M.Sc. in Statistics (2-Year):

Objective: Cultivate a rigorous mathematical and statistical mindset, foster research interests, and train computational statisticians.

Program Structure:
Year I: Core theory—Probability, Inference, Real/Complex Analysis, Stochastic Processes
Year II: Applied courses—Multivariate Analysis, Regression, Bayesian methods, Data Science Lab & electives.

Applied Learning: Lab-based engagement, semester-long projects, and electives including simulation and AI/ML techniques.

Distinguished Faculty

The department takes pride in its distinguished faculty, which forms the foundation of our educational excellence. With a total of 51 professors,assistant professors, and associate professors, our faculty's diverse research interests span both pure and applied mathematics and statistics, enriching the academic environment and fostering innovation.

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DR. SOUMYARUP SADHUKHAN (PhD ISI Kolkata)
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DR. DOOTIKA VATS (PhD, University of Minnesota)
Associate Professor
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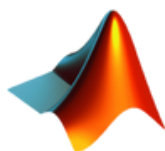**DR. SUBHRA SANKAR DHAR** (PhD ISI Kolkata)
Professor
E-mail: subhra@iitk.ac.in

Skills

Programming Skills
- Python, R, C++, SQL– for data analysis & algorithm development.
- Excel, MATLAB, MINITAB – for statistical modelling and simulation
- GitHub – collaborative code versioning
- Power BI, Tableau – dashboards and data visualisation tools

Analytical & Modeling Skills
- Machine Learning (ML) & AI – classification, clustering, and predictive modeling
- Bayesian Models & MCMC – probabilistic inference and uncertainty estimation
- Time Series Analysis – forecasting and trend modeling
- Shiny Apps & Web Scraping – interactive data dashboards and real-world data acquisition

Courses Offered

Department Courses

- Statistical &AITechniquesin
- Data Mining Statistical Computing
- Data Structures & Algorithms
- Elementary Stochastic Processes
- Time Series Analysis
- Bayesian Analysis
- Multivariate Analysis
- Real Analysis
- Data Science Labs
- Probability Theory
- Theory of Statistics
- Linear Regression & ANOVA
- Matrix Algebra
- Linear Estimation

Department Electives

- Statistical Pattern Recognition
- Markov Chain Monte Carlo
- Spatial Statistics
- ANN/ML Approach for Differential Equations
- Statistical Decision Theory
- Robust Statistical Methods
- Order Statistics
- Econometrics
- Nonlinear Regression
- Sampling Theory
- Statistical Reliability Theory
- Statistical Inference
- Non-Parametric Inference
- Empirical Processes
- Set Theory & Discrete Mathematics
- Ordinary Differential Equations
- Partial Differential Equations
- Measure Theory
- Graph Theory

Open Electives

- Parallel Computing
- Parallel Programming
- Computer Vision and Image Processing
- Big Data Analysis
- Probabilistic Modelling and Inference
- Introduction to Machine Learning
- Probabilistic Machine Learning
- Statistical Natural Language Processing
- Statistical Signal Processing
- Digital Image Processing
- Convex Optimization in SP/COM
- Detection and Estimation Theory
- Speech Signal Processing
- Computational Intelligence for Machine Vision, Automation and Control
- Neural Networks
- Machine Learning for Signal Processing
- Optimization for Big Data
- Artificial Intelligence, Machine Learning and its Applications
- Advanced Topics in Machine Learning
- Principles of Data Base Systems
- Embedding and Cyber-Physical Systems
- Theory of Computation
- Bayesian Econometrics
- Advanced Algorithms
- Randomized Algorithms
- Computer Organisation
- Software Engineering
- Computational Complexity
- Computational Number Theory
- Modern Cryptology
- Data Mining

Areas of Expertise

Theoretical Foundations

- **Real Analysis** – underpinning rigorous algorithm design and advanced statistical modelling.
- **Probability & Inference** – essential for uncertainty quantification, predictive risk models, reliability analysis.
- **Markov Chains & Stochastic Processes** – key to simulation, time-series forecasting, and queuing systems.
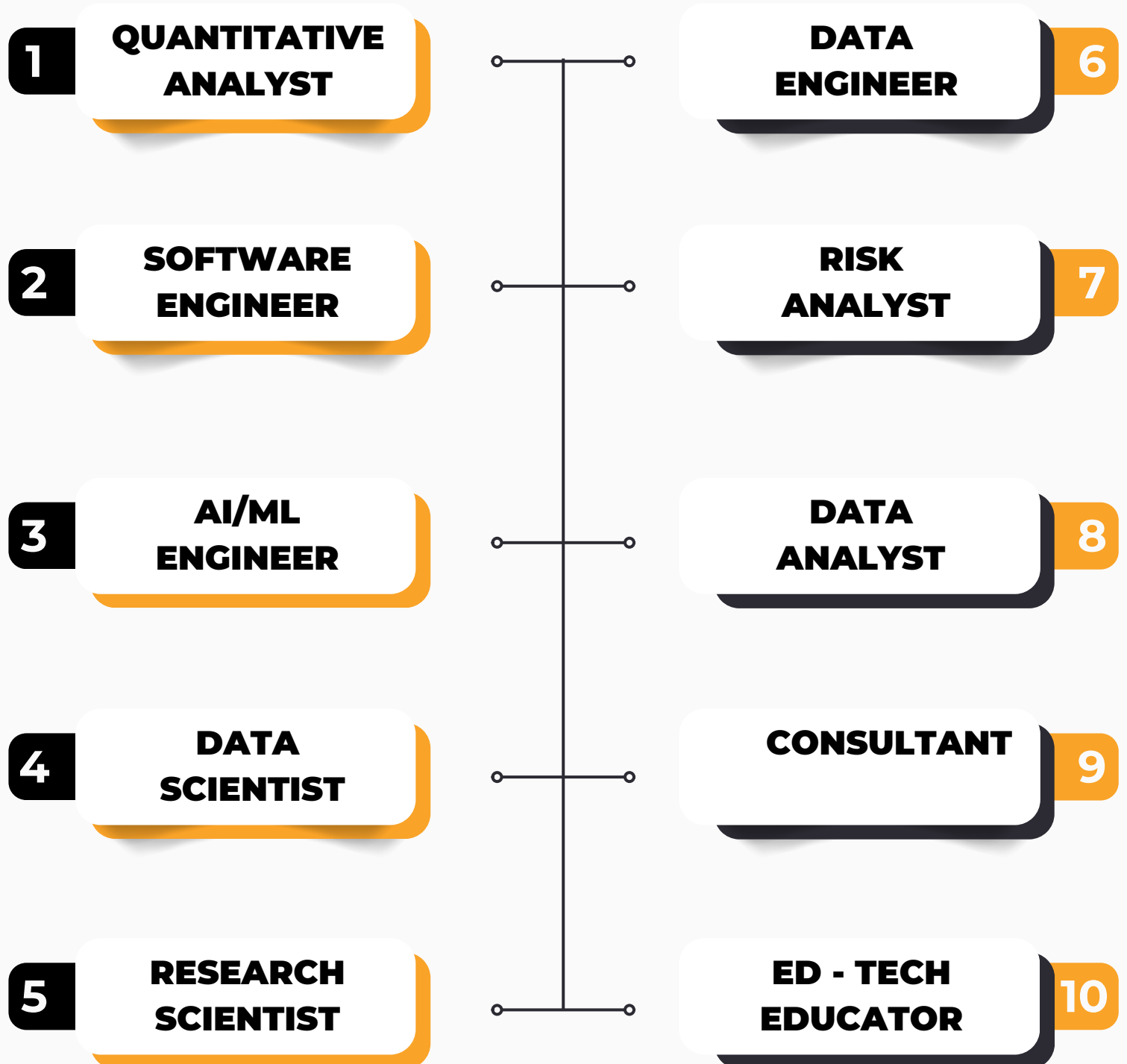
Industry-Focused Applications

- **Natural Language Processing (NLP)** – text analytics using sequence models and deep learning pipelines.
- **Computer Vision** – applied image/data analysis for diagnostics, surveillance, and automated processing.
- **Econometrics & Finance Analytics** – predictive econometric modelling, trading strategies, and risk forecasting.
- **Bioinformatics & Health Analytics** – modelling genomics, clinical and health-related data using statistical pipelines.

Advanced Methodologies & Techniques

- **Clustering, Neural Networks, SGD** – unsupervised learning and deep neural approaches for segmentation, classification, pattern detection.
- **Markov Chain Monte Carlo (MCMC)** – Bayesian inference methods used in simulations and probabilistic modelling.
- **Bayesian Modelling** – hierarchical and probabilistic programming to enable explainable, adaptive AI.
- **Spatial statistics**- Spatial statistical inference and kriging, with applications in groundstation-based and satellite-based data modeling and analysis

Profiles Offered

1. QUANTITATIVE ANALYST
2. SOFTWARE ENGINEER
3. AI/ML ENGINEER
4. DATA SCIENTIST
5. RESEARCH SCIENTIST
6. DATA ENGINEER
7. RISK ANALYST
8. DATA ANALYST
9. CONSULTANT
10. ED - TECH EDUCATOR

Past Recruiters

JPMorgan Chase & Co. · Goldman Sachs · Adobe · Morgan Stanley

Bank of America · Kotak · Wells Fargo · American Express

Credit Suisse · Microsoft · Walmart Labs

Deloitte. · Jaguar · Land Rover · gsk · ICICI Bank

HSBC · UBS · MasterCard · McKinsey & Company

accenture · Oracle · Ford · Tiger Analytics

standard chartered · IBM · eightfold.ai · Samsung

Pfizer · Citi · Atlassian · practo

· D E Shaw & Co · Bajaj · pwc

Bosch · Johnson & Johnson · Max Life Insurance · Axtria Ingenious Insights

Barclays · Nvidia · TCS Tata Consultancy Services · Capital One · KPIT

Bain & Company · genpact · cognizant · EY

Infosys · PACE · BCG The Boston Consulting Group · Trexquant · Axxela · BNP Paribas

Northern Trust · Optum · AlphaGrep · Hannover Re · novo nordisk

Unify · EXL · ThoughtSpot

Schlumberger · Lowe's · vmock · InvoLead

Thank You!

Let's Get In Touch

Contact Us

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