

Department of Mathematical Sciences



Placement Brochure 2017-18

About Us

The Department of Mathematical Sciences began its journey as a section to assist engineering departments of the institute which, in the true sense, pioneered engineering education in the Indian Nation. It soon acquired the status of a full-fledged department in 1985. Its importance lies in the fact that it caters to the needs of the undergraduate as well as post-graduate students of the Institute. In addition, the department runs its own 5 year Integrated Dual Degree Course in Mathematics & Computing.

The department aims to give emphasis to research in analysis, algebra, topology, mathematical transforms etc. Be it fluid dynamics, gas dynamics, biomechanics, fracture mechanics, digital image processing, generalised thermo-elasticity, heat and mass transfer, cryptology and many more fields of applied nature, department's contribution is enormous in terms of numerous research papers published in reputed international journals over the past few decades. Computing is the glamour of the department. It annexes several dimensions in terms of new and growing areas of research and further facilitates simulation of mathematical models constructed for interdisciplinary areas.



Programmes Offered

5-Year Integrated Dual Degree in Mathematics and Computing

This is a relatively new programme started in the year 2005. The programme imparts the necessary knowledge of numerical and computational techniques, various topics in computer science, mathematical modelling, and simulation, probabilistic and statistical tools. The objectives of the programme are:

- **To cultivate a mathematical attitude and nurture the interests,**
- **To motivate for research in mathematical and statistical sciences,**
- **To train computational scientists who can work on real life challenging problems**

Admission to this program is made through the IIT **Joint Entrance Examination (JEE ADVANCED)**

Ph.D. Programme

The Ph.D. Program offers an exciting and unique opportunity to students for pursuing research in several areas of Mathematical Sciences. The vibrant academic environment of the department is nurtured by strongly motivated faculty. The Department faculty takes research initiatives to work in recent and emerging areas. Admission is made twice a year in January and July. Only National Eligibility Test (NET) and Graduate Aptitude Test in Engineering (GATE) qualified individuals are eligible for the admission.



Courses Offered

Computer Sciences

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|-------------------------------------|-------------------------------------|
| C Programming Language | Data Structures |
| Programming Languages and Compilers | Graph Theory |
| Design and Analysis of Algorithms | Operating Systems |
| Theory of Computation | Switching and Finite Automata |
| Object Oriented Programming | Cryptography |
| Information and Coding Theory | Soft Computing |
| Digital Image Processing | Computer Graphics and Visualization |

Mathematics

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|--|-----------------------------------|
| Real and Complex Analysis | Linear Algebra |
| Discrete Mathematics | Topology and Functional Analysis |
| Differential Equations (ODEs and PDEs) | Abstract Algebra |
| Optimization Techniques | Numerical Analysis |
| Non Linear Mathematics | Number Theory |
| Mathematical Methods | Wavelet Analysis and Applications |

Applied Statistics

- Probability and Statistics
- Statistics and Stochastic Processes
- Mathematical Modelling and Simulation
- Operation Research and Techniques

Inter-disciplinary Courses

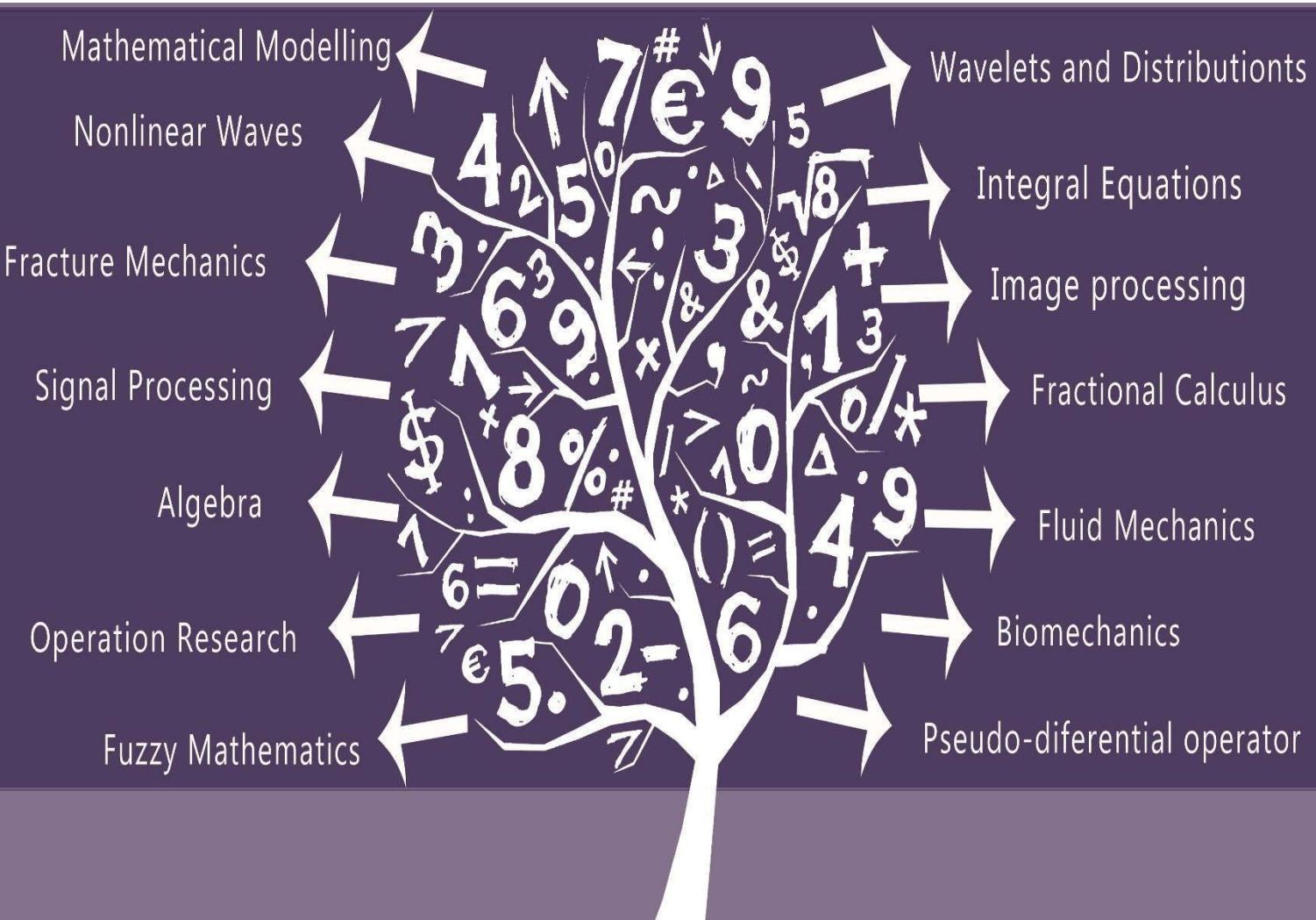
- | | |
|---------------------------------------|---|
| Signals and Systems | Digital Electronics and Microprocessors |
| Electromagnetic Theory and Waveguides | |



Faculty & Research

The department takes pride of the distinguished faculty that enriches the deep roots of education in the institute. There are a total of 19 Professors, Associate Professors and Assistant Professors whose research interests provide a lot of diversity in pure as well as applied Mathematics and Statistics. Moreover the Faculty: Student Ratio is 0.9:1 for every batch.

Areas of Research:



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 previously and to be graduating batch 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.

Foreign Universities:

Nanyang Technological University, Singapore
Imperial College of London
LMU Munich (DAAD-WISE)
Carnegie Mellon University

Indian Universities:

ISI,Chennai
IISc, Bangalore
TIFR Mumbai
IMSc, Chennai
IIIT Hyderabad

Companies:



Past Recruiters



Morgan Stanley



MAQ Software



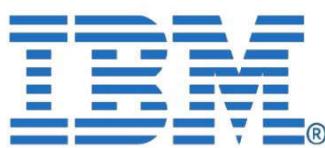
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Intelligent People. Uncommon Ideas.

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For any queries, please contact the Departmental Placement Coordinators or TPC during office hours.

For additional info on Department of Mathematical Sciences,

Visit iitbhu.ac.in/dept/mat