



BIRLA INSTITUTE OF TECHNOLOGY, MESRA

www.bitmesra.ac.in

Department of
MATHEMATICS



**PLACEMENT
BROCHURE
2021-22**



Programmes Offered :

- Two year M.Sc. in Mathematics
- Five year Integrated M.Sc. programme in Mathematics and Computing

Doctoral Programmes

- Ph.D. programme wherein students may choose their research topic aligned with the research interests of the faculty members of the department

The prestigious Department of Mathematics, BIT Mesra, started the five-year Integrated M.Sc programme in Mathematics and Computing in 2011, when it noticed the need for a comprehensive amalgamation of the theoretical and practical aspects of mathematics with Computer Science. Covering the major areas in demand today, this course is of utmost value to aspiring engineers, providing students with comprehensive theoretical knowledge and also practical training in Computer Science and Numerical Computing. The curriculum for this program is designed to meet the need of sophisticated mathematics in modern scientific investigations and technological innovations. The Department of Mathematics takes pride in its faculty which, while making significant research contributions, help empower the next generation of students with a world-class education. The department aims to impart strong fundamental concepts to students in the field of Mathematical Sciences and motivate them towards innovative and emerging areas of research and to create a compatible environment and provide sufficient research facilities for undertaking quality research to achieve global recognition.

COMPUTER SCIENCE

- Computer Networks
- Design and Analysis of Computer Algorithms
- Operating Systems
- Database Management Systems
- Data Mining and Warehousing
- Computer Organisation and Architecture
- Cryptography and Network Security
- Data Structures
- Formal Language and Automata Theory
- Java programming and Web Technologies
- C Programming
- Computer Graphics

STATISTICS

- Probability and Statistics
- Sampling Theory and Design of Experiments
- Statistical Inference
- Stochastic Process and Simulation

APPLIED MATHEMATICS

- Advanced Operations Research
- Discrete Mathematics
- Fuzzy Logic
- Optimization Techniques
- Mathematical Modelling
- Integral Transformation
- Matrix Algebra and Complex Variables
- Numerical Methods
- Partial Differential Equations

PURE MATHEMATICS

- Complex Analysis and Measure theory
- Number Theory
- Functional Analysis
- Linear Algebra and Modern Algebra
- Topology and Real Analysis

The department of Mathematics, BIT Mesra has undertaken research programs in an array of fields some of them being -

Publications :

- Shiny Chakraborty researched on Preliminaries of Real Analysis under Dr. Prof Venky Krishnan, Tata Institute of Fundamental Research-Centre for Applicable Mathematics (CAM), Bengaluru
Published in: Indian Academy of Sciences Journal, 2019
- Snehil Kishore researched on Analysis of Supervised And Unsupervised Dimensionality Reduction Technique On Weather Variables under Dr.Amit Apte, Tata Institute Of Fundamental Research- International Centre For Theoretical Sciences, Bengaluru
Published in: Indian Academy of Sciences Journal, 2019
- Richik Das researched on Social Networking under Dr. Sudarshan Iyengar, Assistant Professor, Department of Computer Science (Indian Institute of Technology- Ropar)
Published in: Indian Academy of Sciences Journal, 2018
- Vivek Nigam researched on Strategic Aspects of Linear Regression under Prof K.S. Mallikarjuna Rao, Industrial Engineering and Operations Research (IEOR) Department (Indian Institute of Technology- Mumbai)
Published in: Indian Academy of Sciences Journal, 2019

Research Areas :

- Algorithm Analysis
- Statistical Computing
- Computational Solid Mechanics
- Differential Equations
- Theoretical Seismology
- Optimization
- Mathematical Modelling and Simulation
- Multiple Criteria Decision Making
- Multiple Objective Decision Making
- Numerical Analysis
- Nonlocal Singular Boundary Value Problems
- Mathematical Modelling of Environmental
- Biological and Ecological Systems
- Cryptography

SOCIETY OF DATA SCIENCE, BIT MESRA

Society for Data Science, BIT Mesra was started in the session 2019-20 following the efforts of the students of the department under the guidance of their Head of Department to curate and organize the efforts of all Data Science and Statistics enthusiasts in the institution.

PROGATE WEEK OF LEARNING

An intensive week-long programming workshop from Progate Japan was organized by the pre-final year students of the Mathematics Department in collaboration with the Entrepreneurship Development Cell-BIT Mesra.

DATA ANALYSIS BOOTCAMP

The Department of Mathematics in collaboration with Floxus organized a 5-Day online bootcamp by Microsoft Innovate Trainers on Data Analysis which dealt with the exploration of various technologies like PowerBi, Tableau and Advanced Excel.

WEEKLY STUDENT SEMINARS

We have been actively engaged in organizing conferences, workshops, summer/winter schools, and lecture series. The department initiated organizing weekly seminars aiming at distribution of knowledge about research areas professed by graduate and Ph.D students.

NATIONAL SCIENCE DAY

National Science Day is celebrated annually on 28th February every year by the department for the celebration of the progress of Science and Mathematics in India.

- ▶ Rohit Singh Rathaur (2018) worked under Dr. Zenna Tavares (MIT: CSAIL) on Research Statement- Fairness Through Adversarial Learning.
- ▶ Monalisha Ojha (2018) worked on Ganga project as an open-source student developer in Google Summer of Code @ CERN-HSF.
- ▶ Kashish Singh (2018) was selected in Microsoft engage program 2021 and built Teams Clone in 1 month during the program under Mr. Raja Singla.
- ▶ Pankaj Kumar Basuri (2018) worked under Professor S.C Pradhan, Department of Aerospace Engineering, IIT Kharagpur on Research Statement-Project work on” Finite Element Method” using Mathematical Application and MATLAB, Published in 2019.
- ▶ Anindya Sadhukhan (2018) worked on Target tracking using Kalman filter(linear and non linear)-The information that we get from sensors are indirect and filled with lots of errors. So it becomes very important to estimate the true state using statistical techniques. Kalman filter is one such filter that approximates the true states very efficiently under IIT Indore.
- ▶ Subhomoy Haldar (2017) been associated with the V community since the past year. I have helped them refine their Pseudorandom Number Generation API in a three-phase approach. I have been involved with the V Scientific Library (VSL) and aim to contribute more to this project in the future. Currently I am helping to stabilize the language's syntax by writing a complete Context Free Grammar for it.
- ▶ Sinjini Roy (2017) was selected in EXL EQ 2021: Top 19 teams out of 500+ teams participating from all over India.

The students have in them a varied sense of understanding in the current methods and operating procedures by the help of subsequent internships during summer and winter breaks. In order to facilitate the students with new advancements the department also ensures industrial visits over the period of semester so that students are convinced by practical means of theoretical sorts. These are some of the places wherein our students have worked as interns:

Industries:

- Crisil
- Zomato
- Ericsson
- SAP Labs
- OYO
- Azim Premji Foundation
- VISA
- Fastenal
- Hindalco
- Facebook
- Salt pe
- Future Firsts
- AB inBev
- Niyo Solutions

Institutes:

- European Organization for Nuclear Research
- IISc. Bangalore
- Moscow Institute of Physics and Technology
- ICTS Bangalore
- ISI Calcutta
- Indian institute of Management, Calcutta
- IIT Indore
- IIT Ropar
- IIT Hyderabad
- National Institute of Public Finance and Policy, New Delhi



Few of our proud
RECRUITERS



Thank You

for your Time & Attention !

Contact Us :

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