# Indian Institute of Technology Patna
## भारतीय प्रौद्योगिकी संस्थान पटना

MASTER OF SCIENCE

# Department of Mathematics

## PLACEMENT BROCHURE
2019-20

# About Us

The Department of Mathematics at IIT Patna was established in August,2008. The department is committed to impart high quality education in Mathematics at undergraduate and postgraduate levels. Keeping this in mind, the department started a two year Masters program in 2016 with the objective of honing future mathematicians and industry leaders with rigorous training in both Pure and Applied Mathematics.

The young and dynamic faculty members of the department have versatile experience both in teaching and research in various areas of Mathematics and Statistics like Bayesian Statistics, Mathematical Control Theory, Number Theory, Non-linear Optimization, Geometric Topology, Mathematical Modeling of HIV dynamics, Graph Theory etc.

The department boasts of generously equipped research laboratories and computational facilities. In the second year, students have to work on their Master's Thesis and they get the opportunity to apply their knowledge to cutting edge areas of mathematical research relevant to both academia and industry.

# Courses Offered

## Core Subjects

- ❑ Probability and Statistics
- ❑ Data Structures and Algorithms
- ❑ Numerical Analysis
- ❑ Ordinary and Partial Differential Equations
- ❑ Operations Research
- ❑ Linear Algebra
- ❑ Real and Complex Analysis
- ❑ Combinatorics

## Electives

- ❑ Statistical Inference
- ❑ Mathematical Modeling
- ❑ Graph Theory
- ❑ Convex Optimization
- ❑ Statistical Decision Theory
- ❑ Control Theory
- ❑ Biomathematics
- ❑ Rings and Modules
- ❑ Algebraic Topology

# Research Areas

- ❑ Algebraic Coding Theory
- ❑ Statistical Decision Theory
- ❑ Combinatorial Topology
- ❑ Mathematical Control Theory
- ❑ Multi-objective Programming
- ❑ Non-linear Optimization
- ❑ Stochastic Differential Equations
- ❑ Mathematical Modeling in Ecology and Epidemiology
- ❑ Mathematical Modeling of HIV Dynamics : in vivo
- ❑ Wireless Communications and Signal Processing
- ❑ Algorithmic Graph Theory
- ❑ Wavelet Transforms
- ❑ Numerical Analysis

# Lab Facilities

- ❑ Computational Research Laboratory
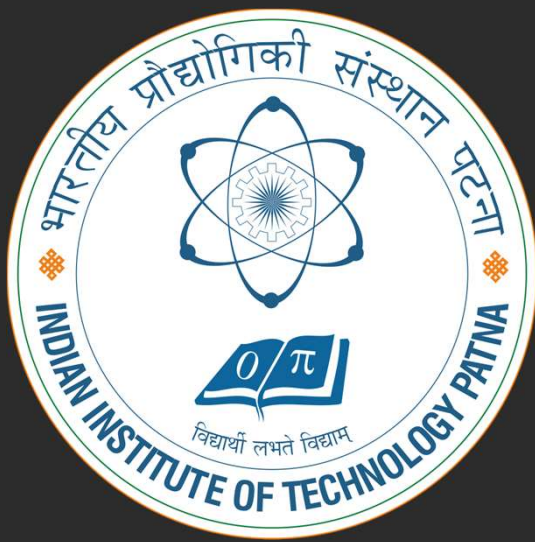- ❑ Signal Processing for Wireless Communications Laboratory

# R&D and Consultancies

- ❑ Estimation with censored data
- ❑ Underwater target motion analysis with passive sensors
- ❑ Nonlinear Singular Differential Equations arising in real life
- ❑ A Classification of d-covered triangulations and Semi-equivelar maps on surfaces

# Why Hire Us

The degree course gives a firm foundation in Pure and Applied Mathematics along with computational and programming skills. In particular, Probability and Statistics, Numerical Analysis and Data Structures and Algorithms. Our students are also competent in a wide variety of programming languages and software tools directly relevant to industry.

M.Sc. in Mathematics, Department of Mathematics at IIT Patna, through its rigorous curriculum satisfies the need for sophisticated mathematics for modern scientific investigations and technological developments. Post graduates of this course with their excellent programming and analytical skills along with Mathematical inciveness would be ready for careers in software industry, data analysis, finance and insurance sector, consulting sector and government organizations. Our Industrial Placement programme is a way to exchange new ideas combined with fresh enthusiasm and knowledge of the latest technology, the opportunity to encourage and invest in future leaders.

# Contact Us

## IIT Patna

M.Sc. Mathematics
Batch : 2018-2020

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