



i^2 Mathematical Sciences (Semesters 5 – 10)

Core - Mathematics

Real Analysis
Linear Algebra
Group Theory
Topology
Complex Analysis
Measure Theory
Functional Analysis
Mathematical Statistics
Probability and Stochastic Processes
Theory of Ordinary Differential Equations
Partial Differential Equations
Numerical Analysis
Data Structures and Algorithms

Thematic - Mathematical Modelling and Scientific Computing

Machine Learning I
Data Science Lab I
Scientific Computing
Mathematical Modelling
Applied Stochastic Analysis
Numerical Solutions of Differential Equations
High Performance Computing
Finite Element Methods
Variational Methods and Control Theory

Electives - Mathematics

Methods of Applied Mathematics
Sobolev Spaces and Elliptic Boundary Value Problems
Computational Stochastic Modelling
Mathematical Finance and Option Pricing
Statistical Methods in Finance
Financial Data Analysis
Mathematical Biology
Stochastic Modelling of Biological Processes

Electives - Open

Machine Learning - II
Big Data Analytics
Artificial Intelligence
Bioinformatics
Systems Biology
Fluid Dynamics
Computational Fluid Dynamics
Modelling Environment Systems
Atmosphere and Big Data

General Courses

Communication Skills + Technical Writing
Intellectual Property Rights
Languages
Economics
Psychology

Research

Full time research project + project management, presentation and entrepreneurial skills.

Research Internships