

Level 1

Semester 1 Semester 2

Introduction to Algebra & Analysis

Mathematical Reasoning

Mathematical Methods 1

Algorithmic Thinking

Introduction to Probability & Statistics

Introduction to SOR Methods

Core Mathematics

Pure Mathematics

Level 2

Semester 1 Semester 2

Linear Algebra

Analysis

Classical Mechanics

Employability for Mathematics

Methods of Operational Research

Group Theory

Metric Spaces

Mathematical Methods 2

Statistical Inference

Modules taught in alternate years available at Level 3 or 4

0 CATS module

Level 3

Semester 1 Semester 2

Rings and Modules

Measure and Integration

Numerical Analysis

Classical Fields

Quantum Theory

Financial Mathematics

Applied Mathematics Project

Linear Models

Mathematical Investigation

Discrete Mathematics

Dynamical Systems

Modelling & Simulation

Investigations

Applied Mathematics Project

Team Project Mathematics with Finance

Stochastic Processes and Risk

Statistical Data Mining with Machine Learn.

Level 4

Semester 1 Semester 2

Topological Data Analysis / Geometry of Optimisation

Topology

MSci Project

Practical Methods for PDEs

Advanced Quantum Theory

MSci Project

Survival Analysis

Functional Analysis / Fourier Analysis & Appl. to PDEs

Applied Algebra & Cryptography

Information Theory

Mathematical Methods for Quant. Inf. Proc.

Statistical Mechanics / Quantum Fields

Bayesian Statistics

MSci Project

In 2021-22: at Level 3, Set Theory (S1) is given instead of Measure & Integration; Metric and Normed Spaces (S2) and Linear and Dynamic Programming (S1) are available; at Level 4: Integration Theory (S1) is given, Bayesian Statistics is not. Level 3 Numerical Analysis cannot be taken by those who took it at Level 2.

Note: not all core mathematics modules are compulsory on some programmes.