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

Level 2

Semester 1 | Semester 2

- Linear Algebra
- Group Theory
- Analysis
- Metric Spaces
- Classical Mechanics
- Mathematical Methods 2
- Employability for Mathematics
- Methods of Operational Research
- Statistical Inference

Level 3

Semester 1 | Semester 2

- Algebra
- Mathematical Investigation
- Measure and Integration
- Dynamical Systems
- Numerical Analysis
- Modelling & Simulation
- Classical Fields
- Financial Mathematics
- Quantum Theory
- Investigations
- Applied Mathematics Project
- Applied Mathematics Project
- Linear Models
- 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
- Functional Analysis / Fourier Analysis & Appl. to PDEs
- Topology
- Applied Algebra & Cryptography
- **MSci Project**
- Practical Methods for PDEs
- Information Theory and Biodiversity
- Advanced Quantum Theory
- Mathematical Methods for Quant. Inf. Proc.
- Statistical Mechanics / Quantum Fields
- **MSci Project**
- Bayesian Statistics
- Survival Analysis
- **MSci Project**

Core Mathematics

Applied Mathematics
Applications of Maths
Theoretical Physics

Modules taught in alternate years available at Level 3 or 4

Pure Mathematics

Statistics & Operational Research

0 CATS module

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

In 2024-25 alternate Level 3/Level 4 modules are Geometry of Optimisation (S1), and Fourier Analysis & Applications to PDEs (S2); Classical Fields (S1) and Statistical Mechanics / Quantum Fields (S2) are suspended.