Mathematics and Physics Programme Overview

Part A

Core Modules

- Foundation of Physics (Core Physics I)
- Classical Physics of Particles, Fields and Devices (Core Physics II)
- Physics Laboratory I
- Computational Physics I
- Mathematics for Physics I
- Analysis I
- Analysis II

Part B

Core Modules

- Quantum & Condensed Matter Physics (Core Physics III)
- Condensed Matter, Materials & Statistical Physics (Core Physics IV)
- Physics Laboratory II
- Computational Physics II
- Mathematics for Physics II
- Analysis III
- Elements of Topology

Year in industry/abroad

Part C

Core Modules

- Advanced Topics (Core Physics V)
- Group Project
- Individual Project (BSc) or Research Methods (MPhys)
- Optional Mathematics Module
- Optional Mathematics Module
- Optional Mathematics Module
- Optional Mathematics Module

Optional Modules

- Introduction to Dynamical Systems
- Random Processes & Time Series Analysis
- Number Theory
- Advanced Differential Equations
- Graph Theory
- Game Theory
- Abstract Algebra
- Mathematics Report
- Introduction to Differential Geometry

Year in industry/abroad

Part D

Core Modules

- MPhys Research Project
- Optional Physics or Mathematics Module
- Optional Physics or Mathematics Module
- Optional Physics or Mathematics Module
- Optional Physics or Mathematics Module

Optional Modules

- Quantum Information
- Quantum Computing
- Mathematical Methods for Interdisciplinary Science
- Physics of Complex Systems
- Regular and Chaotic Dynamics
- Superconductivity and Nano-Science
- Mathematical Modelling I
- Mathematical Modelling II
- Lie Groups and Lie Algebras
- Elements of Partial Differential Equations
- Introduction to Measure Theory and Martingales