Computational Physics

University of Edinburgh

Venues

King's Buildings Campus

Content

Year 1
You will study compulsory courses in physics, mathematics and computing. Physics 1A presents the pillars of physics upon which subsequent material is based and will develop your problem solving and study skills. It is innovative in its use of technology and offers an interactive learning experience.

Physics 1B introduces you to a wide range of physics topics, including waves, introductory quantum mechanics, nuclear and particle physics and how these impact our understanding of the universe. It also includes an introduction to university laboratory work.

You will study Mathematics for Physics 1 and 2 which include mathematical and problem solving skills in the context of algebra and calculus, with increasing emphasis on physical applications.

Informatics courses will cover computation and logic, and functional programming.

Year 2
You will study modern physics and physics of fields and matter. Supporting mathematics courses will cover algebra, calculus, dynamics and vector calculus and you will be introduced to practical physics, including programming, data analysis and experimental techniques. Students will also study a course in computer simulation.

Students entering the programme in Year 2 will take additional introductory courses in classical physics and mathematics.

Most students will have the freedom to choose one or two courses from other academic areas.

Year 3
You will study thermodynamics, statistical mechanics, electromagnetism, optics and quantum mechanics.

We offer a supporting mathematics course covering Fourier analysis, probability and statistics, a computing course on numerical algorithms, and an introductory course to research methods. Students will also undertake a quantum computing project.

Year 4
In this year students undertake project work, and have a wide range of courses to select from including courses covering relativity, nuclear and particle physics, and condensed matter physics.

Start Date

September

Qualification

Degree

Study Method

Full time

Award Title

BSc Hons

UCAS Code

F343

Course Length

4 years

Faculty

College of Science and Engineering

Department

Physics and Astronomy

Entry Requirements

2026 entry requirements

Standard entry:
4 Highers at AAAA (by end of S5 preferred) including Maths and Physics plus English at National 5. Advanced Higher Maths is recommended.

Direct entry to year 2 is possible with above plus 3 Advanced Highers at AAA including Maths and Physics.

Widening access entry:
4 Highers at AABB (two sittings) including Maths at A and Physics plus English at National 5. Advanced Higher Maths is recommended. Highers at BBB must be achieved in one sitting.

SCQF Level

10

Progression Routes

«ProgressionRoutes»

Combination Courses

«htmlCombinationCourse» «htmlCombinationUCASCode»

Address

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Website

www.ed.ac.uk