Mathematics and Physics

University of Aberdeen

Venues

Old Aberdeen Campus

Content

Mathematics is the language of physics and the two are very closely connected. It is the means by which theories of Physics are described and how the complex mathematical relations between force fields, matter and light are expressed. Advanced Mathematics looks at Calculus, Algebra, Probability, Analysis, Theories, and Modelling to give you a solid grounding in advanced applications of Mathematics.

First Year: Students take up to four mathematics courses. Three of these are compulsory: two introductory courses in Analysis (Calculus 1 and 2) and a course in Algebra. The fourth course, which is optional, covers a range of mathematical topics.

The Analysis courses begin with fundamental ideas concerning sets, functions and methods of proof. Then they discuss limits, differentiation and integration of functions in one variable. The Algebra course includes such topics as vectors, matrices, complex numbers and methods of counting. The optional course includes topics like symmetry, elementary number theory, functions and relations, elementary probability and elementary astronomy.

Second year: Students take up to five mathematics courses. Four of the courses are compulsory. Of these, two are Analysis courses, one is in Set Theory and Algebraic Structures and one is in Linear Algebra. The optional course is in Probability Theory.

Third Year (Junior Honours): In third and fourth year taken together, Mathematics students take a total of 14 courses (plus 2 courses of enhanced study). In Third Year, most of these are compulsory and cover topics which are essential for any further study, for example Complex Analysis, Group Theory, Ring Theory and Topology of Metric Spaces. There are further courses, some of which are optional, covering a variety of topics from Pure and Applied Mathematics, such as Mechanics, Mathematical Methods of Physics, Stochastic Processes and Linear Optimisation.

Fourth Year (Senior Honours): There are now even more options, and they depend to some extent on whether a student wishes to obtain a degree in "Mathematics" or in "Applied Mathematics". The programme includes courses on Measure Theory, Galois Theory, Mathematical Modelling and Nonlinear Dynamics, along with a range of optional courses (which may vary from year to year) from Pure and Applied Mathematics, reflecting the research interests in the Department. There is a major project which involves presenting an individual report.

Start Date

September

Qualification

Degree

Study Method

Full time

Award Title

BSc Hons

UCAS Code

FG31

Course Length

4 years

Entry Requirements

2027 entry requirements:

Standard entry:
4 Highers at BBBB including 2 maths and science subjects plus English and Maths at National 5.

For second year entry you would require Advanced Highers at AB.

Widening access entry:
3 Highers at BBC including 2 maths and science subjects plus English and Maths at National 5.

1 Foundation Apprenticeship is accepted in place of a non-essential Higher.

SCQF Level

10

Progression Routes

«ProgressionRoutes»

Combination Courses

«htmlCombinationCourse» «htmlCombinationUCASCode»

Address

King's College
Aberdeen
Aberdeen City
AB24 3FX

Website

www.abdn.ac.uk