

Mathematics



About the Subject

The A level Mathematics course extends the work covered at GCSE and introduces further topics such as calculus, numerical methods and coordinate geometry. These topics are fundamental to many other areas of study as well as Mathematics itself.

The MEI scheme is a syllabus designed by industrial specialists to incorporate real world problems. The use of computers and graphical calculators is encouraged to extend the relevance of the tasks to the main STEM subjects.

The Mathematics department staff are highly experienced and knowledgeable. Their wide range of skills allows the department to offer these courses that support other areas of study. For example, the study of Mechanics supports the study of Physics and the work in Statistics can support study in a wide variety of subjects, such as Biology, Geography and Psychology.

Course Content

All students study four pure mathematics modules covering a range of topics that broaden the knowledge gained at GCSE. There is then a choice between mechanics or statistics for the remaining two modules.

- Mechanics introduces topics such as mathematical modelling, kinematics, statics and dynamics.
- Statistics extends the work on data analysis and probability, looking at hypothesis testing and the Normal distribution.

AS is made up of three modules examined at the end of Year 12 and three examined at the end of Year 13 to complete the A level.

Students wishing to study Further Mathematics A level will cover 12 modules in total over the two years, including the modules previously mentioned, as well as modules on Decision Mathematics.

Entry Requirements

The entry requirements for Mathematics AS are an A grade at GCSE or with an average of 8 x B grades including a B in Maths. Key skills that will be useful from GCSE are the algebra skills. An A* is needed at GCSE in order to study Further Mathematics, which leads to 2 A levels and thus encompasses 2 AS Option blocks.

Career Paths

Mathematics is involved in and supports university courses from Architecture to Zoology. It is commonly thought of in areas such as Medicine, Science and Engineering, but is widely used in fields such as Economics, Business and Sports Sciences.

Mathematics is regularly used in the Financial Services by accountants and actuaries, but also supports careers in many other areas and A level Mathematics is a widely-respected qualification.

Famous mathematicians range from Leonardo Da Vinci to Dara O'Briain. Contemporary mathematicians Marcus Du Sautoy and Simon Singh regularly appear in the media but there are many internationally renowned mathematicians that the not so well known in the public arena, such as Terence Tao, Andrew Wiles, Yuri Manin and the first female recipient of the 'Fields Medal Mathematics Prize'; Maryam Mirzakhani.

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