Mathematics - Further

Advanced Level

General Information

The A level Further Mathematics course is suitable if you possess a deep interest and love of mathematics and have demonstrated a high ability in the subject. Students taking further maths must also choose A level maths.

The course is designed to allow you to develop a wide variety of skills including how to use and apply a wide range of algebraic techniques, how to reason, interpret and communicate mathematically and be able to handle problem solving and mathematical modelling.

How it is taught

Most lessons involve an introduction to new mathematical skills, investigating concepts, working through example solutions, practising techniques as well as a range of other activities including paired and group tasks. You are expected to spend a good amount of time outside of lessons practising skills, researching new topics, checking and reviewing progress and completing homework tasks. A wide variety of resources are available to help you work independently in your own time including video tutorials, worksheets, practical activities, past papers, revision booklets and workbooks

Examination details

The course is linear and the topics are studied over two years with assessment taking place at the end of two years. Assessment is through a number of written examinations.

Entry requirements

You should have at least a grade 8 in Maths GCSE and an average GCSE score of 5.5. You also need to have excellent algebra skills as algebra forms the basis of the course.

You should also meet the general college entry requirements for Advanced Level study. Please refer to the current prospectus – advanced programmes, entry requirements.

In this subject, particular skills and aptitudes will be required, many of which will be demonstrated by students' GCSE profiles.

Entry requirements might be changed in light of curriculum reform.

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Course content

The Further Maths A level course covers a wide range of topics from both pure mathematics and applied mathematics.

Pure maths topics include calculus, trigonometry, algebra and functions, proof, vectors, and numerical methods. These topics are studied to a higher level than in the A level Mathematics course. Further pure topics such as complex numbers, hyperbolic functions, polar coordinates, matrices and differential equations are also studied in Further Maths.

Further Maths students will also study some applied mathematics: mechanics and decision maths. Mechanics topics include kinematics, Newton's laws of motion, momentum and impulse, moments and work, energy and power. Decision mathematics involves the study and application of algorithms including network algorithms, critical path analysis and linear programming.

Useful / common subject combinations

Many students choosing Further Mathematics typically study it alongside other subjects such as Chemistry, Physics, Computing, Psychology, Biology, Geography, Economics and Business Studies but each year there are students on the course from almost all of the other subject areas.

Careers / HE information

Further Mathematics is an ideal choice if you wish to follow a course in higher education involving a large amount of Mathematics as students who have studied Further Mathematics find the transition to university far more straightforward.

A growing number of competitive university courses in mathematics and engineering specify Further Mathematics as an entry requirement. For some degree courses, students who have taken Further Mathematics may be made a reduced A level offer compared to those students who are just taking Mathematics.

Each year, a number of Further Mathematicians go on to study mathematics, engineering, physics and other scientific subjects at university. Almost all of our A level students gain University places or full time employment at the end of their course at QE.

Other relevant information

If you are considering studying Further Mathematics you should try to ensure you choose this option during Bridging.

QE