

# Mathematics

Advanced Level

## General Information

The A level Mathematics course is designed to allow you to develop a variety of mathematical 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.

### Entry requirements

You should have at least a grade 6 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

Two thirds of the course is pure mathematics and includes topics such as calculus, trigonometry, algebra and functions, proof, vectors and numerical methods.

You will also study some applied mathematics topics. Mechanics involves the study of forces and moments and how these affect moving objects. Statistics develops a deeper understanding of probability and covers methods for summarising and analysing data. You will be expected to use technology such as spreadsheets and scientific calculators to analyse large real-life data sets.

### 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 three written examinations, two in pure mathematics and one in applied mathematics.

### Careers / HE information

We have a number of students who go to university to study Mathematics but many also study Engineering, Computing and the Sciences.

Mathematics students often gain employment in the financial services industries.

### 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 and preparing for 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.

### Useful / common subject combinations

Many students combine Mathematics with Chemistry, Physics, Computer Science, Psychology, Biology, Geography, Economics and Business Studies, but each year there are students from almost all other subject areas.

# QE