ABBEYGATE
Sixth Form College

MATHS & FURTHER MATHS

Entry requirements:

A minimum of 5 GCSEs Grade 4-9;
Maths: Minimum Grade 6 Maths and average GCSE Score 5.5*
Further Maths: Minimum Grade 7 Maths and average GCSE Score 5.5*

STUDENT PROFILE

This course will appeal to any student who has at least a grade 6 at GCSE, or grade 7 for Further Mathematics, enjoys solving problems and relishes a challenge

Although the subject obviously supports subjects such as sciences, it can be studied alongside any other A levels.

PROGRESSION

Mathematics is valuable as a supporting subject to many courses at A-level and degree level, especially in the sciences, Geography, Psychology, Sociology and medical courses. It is a useful qualification for entry to a wide variety of full-time courses in higher education and employment

Higher education courses or careers that require A-level Mathematics, or are strongly related to the subject include: Economics, Medicine, Architecture, Engineering, Accountancy, Teaching, Psychology, Environmental Studies, Computing and Information Technology.

*Information on how to calculate your average GCSE Score can be found at www.abbeygatesfc.ac.uk/courses

STUDENT VIEW

"Mathematics at A -level offers the core knowledge needed to do a science subject at university; it also develops your thinking skills and logic to levels that will help with any future career. "

COURSE CONTENT

Maths and Further Maths at A level are divided into three areas:

Core (Pure) Mathematics, Statistics, and Mechanics. There may be an opportunity for students taking Further Mathematics to study Decision Maths.

Pure Mathematics
When studying Pure Mathematics at A-level, you will be extending your knowledge in familiar areas such as Algebra, Trigonometry, and Co-ordinate Geometry as well as studying new areas such as Calculus and Logarithms. Although many of the ideas you will discover in Pure Mathematics are interesting in their own right, they also serve as an important foundation for other branches of Mathematics, especially Mechanics and Statistics.

Mechanics
When you study Mechanics you will learn how to describe mathematically the motion of objects and how they respond to forces acting upon them, from cars in the street to satellites revolving around a planet. You will learn the technique of mathematical modelling - that is, of turning a complicated physical problem into a simpler one that it can be analysed and solved using mathematical methods. Many of the ideas you will come across in the course form an almost essential introduction to such important modern fields of study as Cybernetics, Robotics, Biomechanics and Sports Science, as well as the more traditional areas of Engineering and Physics.

Statistics
When you study Statistics you will learn how to analyse and summarise numerical data, using techniques such as random sampling and linear regression, in order to arrive at a conclusion. You will extend the range of probability theory that you studied at GCSE and learn how to calculate probabilities using the Binomial and Normal Distributions. This is an important branch of Mathematics that is relevant in Geography, Business, Politics and any other area of study where data is used to inform decisions.

Decision Maths
The study of Decision Maths is learning and modelling the routines or algorithms that are utilised in the decision process of computing techniques, business and industry. From sorting, recognition of networks, minimum routes and complex algorithms.