

A Level Maths and Further Maths

A Level Mathematics is an interesting and challenging course which extends the methods you learned at GCSE and includes optional applications of mathematics, such as Statistics and Mechanics. The requirements for the course would be a good GCSE profile and at least a grade 7 in GCSE Maths.

The A Level is split into 2 sections: Pure Mathematics and Applied Mathematics. Applied Mathematics is then split into Statistics and Mechanics. Pure Mathematics is 2/3 of the course and Applied is 1/3. At the end of the 2-year course there will be 3 exams: 2 Pure and 1 applied each totalling 100 marks.

Pure Maths

These are the methods that we use in maths. These are mostly algebraic and requires good reasoning and problem solving.

Pure Maths Topic areas:

- Algebra and Functions
- Coordinate Geometry in the (x, y) plane
- Sequences and Series
- Trigonometry
- Exponentials and Logarithms
- Calculus (Differentiation and Integration)
- Numerical Methods
- Vectors
- Proof
- Modelling

Applied Mathematics

Mechanics – Modelling and analysing the physical world around us, including the study of forces and motion. Mechanics is particular useful to students studying physics and engineering.

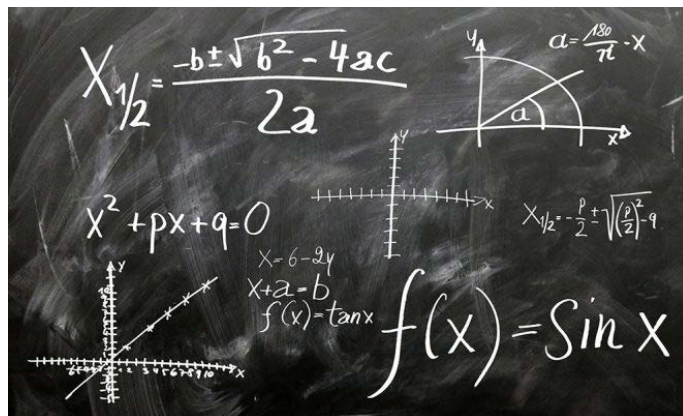
Mechanics Topic areas:

- Kinematics
- Forces
- Newton's Laws
- Moments

Statistics – Collecting and analysing data and using this to make predictions about future events. Many subjects make use of statistical information and techniques. An understanding of probability and risk is important in careers like insurance, medicine, engineering and the sciences.

Statistics Topic areas:

- Sampling
- Presenting and interpreting data
- Probability
- Statistical Distributions (Binomial and Normal)
- Hypothesis Testing



University Courses and Career progression

Mathematics and Further Mathematics are well respected by employers and are both “facilitating” subjects for entry to higher education. People who have studied mathematics are in the fortunate position of having an excellent choice of career. There is a huge demand from science, engineering and manufacturing employers. The reason why so many employers highly value mathematics qualifications is mathematics students become better at thinking logically and analytically. Through solving problems you develop resilience and are able to think creatively and strategically. The courses at university that Maths is either essential or useful:

- Mathematics
- Physics
- Engineering
- Economics
- Statistics
- Actuarial Science
- Accountancy
- Chemistry
- Computer Science
- Management studies
- Biology
- Architecture
- Medicine
- Psychology
- Teaching
- Geography
- Business studies
- Dentistry
- Law
- Philosophy

Further Maths

This is a separate A Level to be taken alongside the Maths A Level. It is invite only after initial A Level Maths assessments have taken place. You can however express interest upon enrolment. This can be taken as an AS for 1 year of the full A Level as a two year course. The course is split into Pure (50%) and Applied (50%) where you would look at further Mechanics topics and Decision Maths – looking at algorithms to solve problems which are used in Business, Logistics and Computer science. Further Maths is very useful to those looking to study Maths or Physics at university.

