

Why study Mathematics?

Mathematics is a versatile subject, respected by employers and universities. Mathematics students become better at thinking logically and analytically and through problem solving, develop resilience and are able to think creatively and strategically. Mathematics is a requirement for most Science and Engineering degree courses and the skills you learn in Mathematics are of great benefit in a range of other subjects such as Sciences, Computing and Business studies.

What skills are required?

A Level Mathematics requires students not only to extend their range of Mathematical skills and techniques, but also to be able to develop a greater understanding of how different fields of Mathematics are connected, to be able to apply Mathematics to other areas of study, to solve Mathematical problems in a variety of contexts, and to construct Mathematical proofs. In order to do this, students need to have a secure and in depth understanding of all areas of Mathematics from GCSE, which is why we ask for a Level 7 or above. It is also useful for A Level Mathematics students to have well developed problem solving skills.

Course Content

Over the two year course students will cover the following content:-

Pure Mathematics

- Topic 1 – Proof
- Topic 2 – Algebra and functions
- Topic 3 – Coordinate geometry in the (x,y) plane
- Topic 4 – Sequences and series
- Topic 5 – Trigonometry
- Topic 6 – Exponentials and logarithms
- Topic 7 – Differentiation
- Topic 8 – Integration
- Topic 9 – Numerical methods
- Topic 10 – Vectors

Applied Mathematics

Section A: Statistics

- Topic 1 – Statistical sampling
- Topic 2 – Data presentations and interpretation
- Topic 3 – Probability
- Topic 4 – Statistical distributions
- Topic 5 – Statistical hypothesis testing

Section B: Mechanics

- Topic 6 – Quantities and units in mechanics
- Topic 7 – Kinematics
- Topic 8 – Forces and Newton's laws
- Topic 9 – Moments

How it will be assessed:

Paper 1	Paper 2	Paper 3
Pure Mathematics 1 Covering all pure Mathematics topics	Pure Mathematics 2 Covering all pure Mathematics topics	Statistics and Mechanics Covering Statistics topics in Sec A and Mechanics in Sec B
2 hours	2 hours	2 hours
Calculator allowed	Calculator allowed	Calculator allowed
33.3% of overall grade	33.3% of overall grade	33.3% of overall grade
100 marks	100 marks	100 marks

Progression

Mathematical skills underpin a huge range of disciplines from ICT to Medicine and from Architecture to Banking. The Mathematics courses provide you with those skills needed to solve problems in these disciplines as well as creating students who are logical thinkers and problem solvers. In many cases, having a Mathematics A level will exempt you from having to take Foundation Mathematics courses as part of your first year degree study.

Staff

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