

# Further Mathematics

## What is Further Mathematics?

Further Mathematics is an AS/A Level qualification which both broadens and deepens the mathematics covered in AS/A Level Mathematics. AS Level further mathematics is designed to be learnt alongside AS Level Mathematics in Year 12.

## Why choose study Mathematics?

- Any student planning on taking a mathematically-rich degree such as Engineering, Sciences, Computing, Finance / Economics etc, as well as Mathematics itself, will benefit enormously from taking Further Mathematics, at least to AS Level.
- AS Further Mathematics introduces new topics such as matrices and complex numbers that are vital in many maths-rich degrees. Students who have taken Further Mathematics find the transition to such degrees far more straightforward.
- Studying Further Mathematics boosts students' performance in AS/A Level Mathematics as it consolidates and reinforces students' standard A Level Mathematics work.

## Entrance Requirements

You will need to enjoy the subject and expect to gain a grade 8 or above at GCSE.

## Elements of the course

The course is split into Further Pure and Further Applied Mathematics. Further Pure looks at extending algebra skills even further than Mathematics A Level and Further Applied involves Decision Mathematics and further statistics and mechanics skills learnt in A Level Mathematics.

## Course Content & Learning Styles

- Further Pure is the study of matrices and complex numbers.
- Decision mathematics is a relatively new branch of mathematics developed to help computers run programs, organise large projects such as building submarines or deciding how best to link ten cities with cable TV.
- Statistics is an essential tool for many professions, being able to analyse and interpret data is a powerful skill to have. Further Mathematics takes these skills to a greater depth of understanding.
- Mechanics is the study of the physical world, of friction and forces and how to minimise or indeed accentuate these forces. Further Mathematics picks up where A2 leaves Mechanics and develops these ideas.

## What the Universities say about FM

**Bath** – Economics; Further Mathematics is considered useful...

**Bath** – Physics; Further Mathematics and Chemistry are particularly useful and popular.

**Birmingham** – Chemical Engineering; lower grade offer is made if one of your A2 subjects is Further Mathematics.

**Cambridge** – Computer Science; Further Mathematics is preferred in most colleges.

**London Imperial** – Aeronautical Engineering; Further Mathematics is highly recommended.

**London Imperial** – Computing; Mathematics underpins computing and our experience is that the more exposure that students have had to advanced mathematics before starting the course, the better they are able to cope.

Generally, universities are prepared to be more flexible in their offer to students who have studied Further Mathematics; - with an offer on highly sought after courses / universities and sometimes with a lower offer than others.