

# A-Level Further Mathematics

EXAM BOARD: Edexcel

## What does the course cover?

Further Mathematics must be studied alongside the standard Mathematics A-Level. There is one compulsory Paper and then a range of further topics to select from. Areas which you will cover include:

- Further Pure Mathematics: An exciting part of maths introduces you to imaginary numbers, parabolic and hyperbolic equations, matrices and proof by induction. It is extremely rewarding, but not for the faint hearted. You will then go on to delve further into imaginary numbers and then straight into one of the most useful areas of mathematics: first and second order differential equations. These are used to model all sorts of processes used in physics, economics and biology. A simple example is modelling the rate at which a mug of tea cools down; this is related to the temperature difference between the tea and the room, but this will change as it cools down, making it more complicated to model than you think. Lastly, there is an introduction to a new coordinate system: polar coordinates.
- Other areas include extending further with Further Pure Mathematics, there are options to study a range of applied modules including Further Mechanics, Further Statistics and Decision mathematics.

## What skills will the course help you develop?

Fluency in the key mathematics topics for science and engineering.

Organising and presenting a structured and logical argument.

Confidence in mastering challenging ideas and overcoming difficulties.

Thinking in an abstract and symbolic way.

## How is the course assessed?

The course is assessed through exams only with 4 exams taken for a full A-Level at the end of the 2 year course. Paper 1 and 2 are equally spread over all Further Pure mathematics with Paper 3 and 4 giving options of topics including extension of Further Pure Mathematics, Further Mechanics, Further Statistics and Decision. Each paper is worth 75 marks (25%) and a 1 hour 30 minute exam.

## What are the entry requirements?

To take two Maths A-Levels you need to really enjoy solving mathematical problems and want to devote a significant amount of your time to it. A Grade 8/9 at GCSE is essential.

## What do students who study this course go on to do?

It is becoming more and more common for Universities to request Further Maths as one of their core requirements in subjects such as Mathematics, Engineering and Physics. In addition, any students wanting to study any of these subjects will find these more challenging courses more manageable if they have studied Further Maths.

## Who is the staff contact for Further Mathematics?

Mr Hollindale, Miss Le Brun, Miss Filgate and Miss Stone are all available for Further Mathematics. As class sizes are often very small, some of the teaching may take place through interactive classrooms with the Oxford Further Mathematics Network.