

further mathematics

A Level Further Mathematics

Awarding Body: Edexcel

Course content

Further mathematics is designed for students with an enthusiasm for mathematics. As well as building on algebra and calculus introduced in A level mathematics, the further mathematics core content introduces complex numbers and matrices - fundamental mathematical ideas with wide applications.

The optional modules enable students to specialise in areas of mathematics that are relevant to their interests and aspirations. This qualification prepares students for further study in disciplines that require understanding of sophisticated mathematical ideas.

The first year will cover a full A level in Mathematics. The second year will cover A Level Further Mathematics. The content of the first year is all compulsory, see the page on Mathematics A Level for this. The content of the second year is as follows:

Aims of the Course:

Understand mathematics in a way that promotes confidence, fosters enjoyment and provides a strong foundation for progress to further study.

Understand how different areas of mathematics are connected.

Reason logically and recognise incorrect reasoning.

Construct mathematical proofs.

Use correct notation to communicate their ideas.

Use their mathematical skills to solve challenging problems which require them to decide on a strategy.

Use calculators effectively.

Take increasing responsibility for their own learning and mathematical development.

Core Pure (compulsory, 50%):

Complex Numbers

Series

Roots of Polynomials

Volumes of Revolution

Matrices

Proof by Induction

Vectors

Polar Coordinates

Hyperbolic Functions

First Order Differential Equations

Second Order Differential Equations

A choice of two out of the three following modules (25% each):

Further Statistics

Further Mechanics

Decision

Assessment:

Paper 1: 1.5 hours – Core Pure

Paper 2: 1.5 hours – Core Pure

Paper 3: 1.5 hours – First Optional Module

Paper 4: 1.5 hours – Second Optional Module

Progression:

Further Mathematics is considered to be a very prestigious qualification by all universities. It may be of particular use to anyone considering studying Mathematics, Statistics, Physics, Engineering, Computer Science or other numerate degrees at one of the UK's leading universities.

Entry Requirements:

Grade 8 or above in GCSE

Mathematics (Additional Mathematics is an advantage, but not compulsory).