

Further Mathematics

Course content

Further Mathematics is designed for students with a strong interest in mathematics who wish to explore more advanced concepts alongside A-Level Mathematics. It builds on the topics covered in Mathematics and introduces new areas such as complex numbers, matrices, further calculus, and advanced statistical methods.

The course provides a deeper understanding of mathematical reasoning and problem-solving, preparing students for higher-level study in mathematics, engineering, physical sciences, computing, and other related fields.

A-Level Further Mathematics is a two-year course. It is taken alongside A-Level Mathematics, with additional teaching time allocated to cover the extended syllabus.

The following topics are typically studied during A-Level Further Mathematics:

Year 12

- Complex numbers
- Matrices
- Further algebra and functions
- Further calculus
- Further vectors

Year 13

- Polar coordinates
- Hyperbolic functions
- Differential equations
- Further statistics and mechanics
- Decision mathematics (algorithms, graph theory, optimisation)

Entry requirements

Grade 7 in GCSE Mathematics. Students must also be studying A-Level Mathematics.

Assessment

Assessment is entirely by written examination at the end of Year 13. The course is made up of several examination papers, each covering different branches of pure and applied mathematics. The exact paper structure and weightings are set by the examination board.

Progression

A-Level Further Mathematics is highly regarded by universities and employers, especially in fields requiring advanced analytical and quantitative skills. It is particularly valuable for students intending to study mathematics, engineering, physics, computer science, or related disciplines at university.