Further Maths
Edexcel A level Further Mathematics

Further Mathematics AS and A-level are courses taken in addition to the standard Mathematics AS and A-level. The field of mathematics has many branches: algebra, calculus, probability, statistics, number theory, analysis, and so on. A-level Maths is packed with topics, but there is only so much that can be covered in the curriculum. Further Maths is not just *more of the same* – it extends and complements the core Maths A-level. Sure, there will be some overlap, but it further covers areas of mathematics that you won't see in the standard course. Further maths builds on the knowledge students gain from A-level Maths to both introduce new topics and take familiar topics to the next level.

Topics you will study

Paper 1: Core Pure Mathematics 1 (*Paper code: 9FM0/01)

Paper 2: Core Pure Mathematics 2 (*Paper code: 9FM0/02)

Content overview

- Topic 1 – Proof,
- Topic 2 – Complex numbers,
- Topic 3 – Matrices
- Topic 4 – Further algebra and functions
- Topic 5 – Further calculus
- Topic 6 – Further vectors
- Topic 7 – Polar coordinates
- Topic 8 – Hyperbolic functions
- Topic 9 – Differential equations

Paper 3C: Further Mechanics 1 (*Paper code: 9FMA0/3C)

Content overview

- Topic 1 – Momentum and impulse
- Topic 2 – Work, energy and power
- Topic 3 – Elastic strings and springs and elastic energy
- Topic 4 – Elastic collisions in one dimension
- Topic 5 – Elastic collisions in two dimensions

Paper 3D: Decision Mathematics 1 (*Paper code: 9FMA0/3D)

Content overview

- Topic 1 – Algorithms and graph theory
- Topic 2 - Algorithms on graphs
- Topic 3 – Algorithms on graphs II
- Topic 4 – Critical path analysis
- Topic 5 – Linear programming

Why study this subject?

If you just love maths and enjoy studying it, that is an excellent reason to opt for Further Maths. The more you are able to engage with your A-levels, the more effective your studying will be, leading to better exam results at the end of the 2 years. Taking Further Maths means that your experience in the standard Maths A-level will be greatly enhanced since there are a lot of transferable skills between the two. Another good reason to take an A-level in further maths is if you are planning to study a Mathematics BSc or closely related degree at university. This will increase your chances of attaining a place on the course you're after. Additionally, it will make life a little easier in the first 6 months of your degree – as you will already be familiar with more of the content taught in the first semester. Many courses will look favourably on applicants with an A-level in Further Maths over those with an AS in an unrelated subject.

Why study this subject at Aston?

- 100% Grade B+(2024)
- Teaching by specialist Mathematics teachers, who already know you and how you learn.
- Very small class sizes than college allowing for more personal support
- Caring staff who really want you to do well

Assessment

The Pearson Edexcel Level 3 Advanced GCE in Further Mathematics consists of four externally examined papers.

Each paper is: 1 hour and 30 minutes written examination 25% of the qualification 75 marks
Students must answer all questions. Calculators can be used in the assessment.

Links particularly well with these subjects

Biology, Chemistry, Physics, Geography, Psychology

Entry requirements

Grade 7 or above in Mathematics.

Where can Further Maths A-level take you?

Those who want to pursue the following courses at the university:

- Engineering (e.g. Mechanical Engineering)
- Chemical Engineering and Biotechnology (A-Level Further Maths is expected at the University of Cambridge)
- Natural Sciences.
- Medicine.
- Mathematics.
- Computer Science.
- Artificial Intelligence.

Useful for careers in….

- Actuarial Sciences and Risk Management
- Cryptology
- Computer and Information Research Scientist
- Financial Analysts
- Data Scientists and Statisticians
- Modelling
- Data Scientists
- Engineering
- Medicine
- Software engineer
- Investment banker