

Subject Guide:

A Level and AS Further Maths

Change to all A Levels

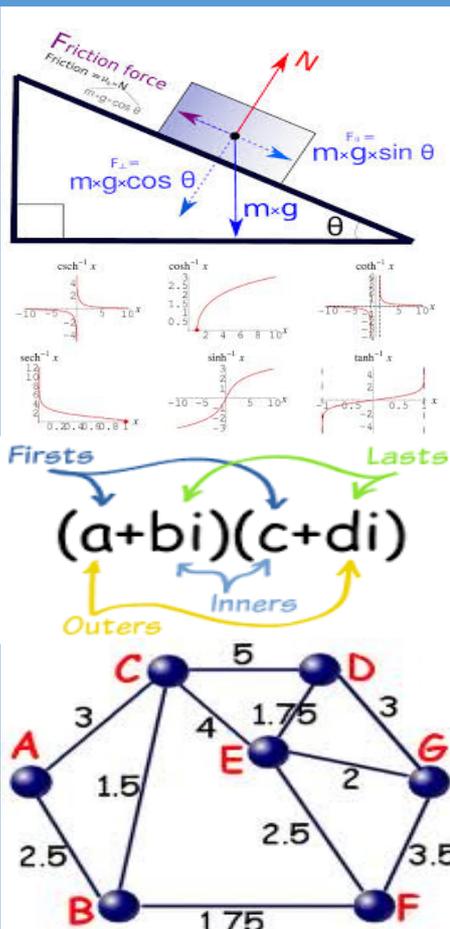
Changes are under way for all A Levels in all schools and colleges and some awarding bodies have still not finalised their syllabuses for 2015. As a result, this guide is an illustration of the content but the exact details may change.

The most significant changes in A Levels and AS exams (but see below for the different timescale in this subject) are:

- All assessment for A Levels will be through end of course exams with no practical element in most subjects.
- There will still be AS as one year “half A Levels” but you won’t be able to add an A2 to make them into a full A Level.
- This means if you want a full A Level you will need to decide that at the start of your course.
- You will still be able to combine A Levels with other types of qualifications such as BTECs.
- These changes are happening at different times for different subjects.
- These reforms may be halted depending on the result of the May 2015 General Election.
- You’ll have lots of support from us before you have to make your final choice of subjects.

Specifics for this subject:

The first teaching for the new A Level Further Maths qualification has been delayed by the Government until September 2016 leading to an end of course exam in 2018. This means UTC Further Maths students will take the AS examination followed by the full A Level.



What is Further Maths?

As the name suggests, Further Maths is a option that allows students who know they want mathematical skills as a key part of their future career to take two A Levels in the subject.

This can give you an advantage when applying to top universities, especially in degree subjects that have a significant Maths content, for example Engineering, Computing and Physics.

The way that it works is that instead of taking A Level Maths over two years (see the A Level Maths subject guide) you do the AS and A2 Maths in Year 12, giving you a full A Level in one year.

You then progress to additional Maths units in Year 13 that allow you to achieve a second AS (if you take three units) or a full additional A Level (if you take six units). So:

Year 12:

AS Maths plus A2 Maths to give one A Level

Year 13:

AS Further Maths plus (if you want) A2 Further Maths to give a second A Level.

What GCSEs do I need to study Further Maths?

You must have gained an A* or A in GCSE Maths in order to show that you will be able to cope with the very demanding schedule of Further Maths A Level and we’d also expect you to have done very well in Physics. We will consider students with a B grade for the two-year Maths A Level while students interested in a Maths qualification to support other subjects who do not have an A* or A at GCSE should consider whether the Level 3 Certificate in Quantitative Problem Solving would suit their needs better.



What could I do with it afterwards?

Maths is valued as an entry qualification for almost all university subjects and mathematical abilities help secure good careers across a wide range of occupations including becoming engineers, scientists, bankers, accountants, computer scientists, environmental scientists, geologists, transport engineers and many more. Further Maths demonstrates your strong commitment to a mathematical occupation.



What form does the assessment take?

All assessment is through end of course exams and there is no coursework mark.

The AS examinations cover 3 units and in at least one the use of calculators is not allowed. A further three units are taken in A2 examinations to complete the A Level.

Course details

Year 12

AS MATHS which comprises:

Pure Maths : Core Maths 1

- Algebra
- Differentiation
- Co-ordinate Geometry

Core Maths 2

- Algebra and polynomials
- Trigonometry
- Integration

Applied Maths—Mechanics : Mechanics 1

- Forces & equilibrium
- Kinematics
- Linear momentum of particles

A2 MATHS which comprises:

Pure Maths: Core Maths 3

- Further Trigonometry
- Differentiation and Integration
- Co-ordinate Geometry

Core Maths 4

- Additional Differentiation and Integration
- Vectors

Applied Maths—Mechanics: Mechanics 2

- Projectile motion
- Work, energy & power
- Particle collisions

Year 13

The second year allows you to progress to either a second AS or a second full A Level:

AS FURTHER MATHS which comprises:

Pure Maths : Further Pure Maths 1

- Further Algebra and Polynomials
- Matrices
- Complex Numbers

...and then two other units you haven't already done in Year 12

- Probability and Statistics 1
- Decision Mathematics 1

A2 FURTHER MATHS which comprises:

Pure Maths: Further Pure Maths 2

- Hyperbolic Functions
- Rational Functions and Graphs
- Further Differentiation and Integration

Further Pure Maths 3

- Further Differential Equations
- Further Vectors
- Complex Numbers

...plus three other units from

- Mechanics 3
- Mechanics 4
- Probability and Statistics 3
- Decision Mathematics 2