



Mathematics

Course Title

Mathematics

Awarding Body

Edexcel

Course Level

A Level - 2 Year

Course Description

This qualification will enable students to:

- understand mathematics and mathematical processes in a way that promotes confidence, fosters enjoyment and provides a strong foundation for progress to further study.
- extend their range of mathematical skills and techniques.
- understand coherence and progression in mathematics and how different areas of mathematics are connected.
- apply mathematics in other fields of study and be aware of the relevance of mathematics to the world of work and to situations in society in general.

Course Content

Pure Maths, including proofs; algebra; geometry; sequences and series; trigonometry; exponentials and logarithms; differentiation and integration; and vectors.

Statistics and mechanics, including statistical sampling; data presentation and interpretation, probability, statistical distributions, quantities and units in mechanics, kinematics and forces & Newton's Laws

Assessment

- Paper 1 & 2: Pure Mathematics
- Paper 3: Statistics and Mechanics
- Each paper is: 2-hour written examination 33.33% of the qualification 100 marks

Progression Routes

The academic rigour of A Level mathematics is recognised by all universities and as such it is often chosen as an accompanying A Level for entry into science-based degree courses including physics, chemistry, biology, medicine and psychology, as well as the more obvious routes into pure mathematics, statistics, accountancy and IT based degrees and apprenticeships.

Entry Requirements

GCSE level 7 in Mathematics



Further Mathematics

Course Title

Further Mathematics

Awarding Body

Edexcel

Course Level

AS

Course Description

The study of Further Mathematics will extend students' ability to:

- reason logically and recognise incorrect reasoning
- generalise mathematically
- construct mathematical proofs
- use their mathematical skills and techniques to solve challenging problems which require them

Course content: Core Pure Mathematics: Proof, Complex numbers, Matrices, Further algebra and functions, Further calculus, Further vectors.

Options: Further Statistics, Further Decision Mathematics, Further Mechanics Mathematics

Course Content

Core Pure Maths 1, including complex numbers, series, matrices, proof and vectors

Core Pure Maths 2, methods in calculus, volumes of revolution, polar coordinates, hyperbolic functions and differential equations

Decision Maths 1, including algorithms, graphs and networks, linear programming and critical path analysis.

Further Statistics 1, including discrete random variables, poisson and geometric distributions, hypothesis testing, central limit theorem and chi-squared tests.

(Other optional units are available in further mechanics and further pure mathematics but the D1/FS1 option is most commonly followed at Arrow Vale)

Assessment

- Papers 1 & 2: Core Pure Maths
- Paper 3 & 4: two optional units
- Each paper is: 1.5-hour written examination 25% of the qualification 75 marks

Progression Routes

A-level Further Mathematics enhances the opportunities for the progression routes described for Mathematics. Additionally, it is a key requirement for Maths and Maths associated degrees at the most prestigious universities.

Entry Requirements

GCSE level 7 in Mathematics (level 8 preferred) – taking the AQA L2 Certificate in Further Maths in Y11 is also useful preparation for Further Maths A-level