

Further Mathematics

A-LEVEL

EXAM BOARD Edexcel

COURSE CONTENT

Component 1: Core Pure Mathematics Papers 1 & 2

Proof, Complex numbers, Matrices, Further Algebra and functions, Further calculus, Further vectors, Polar coordinates, Hyperbolic functions, Differential equations

Component 2: Further Mathematics Option 1 & 2

For these papers students choose a pair of options, either

- any two from column A, or
- a matching pair from columns A and B

Column A	Column B
Further Pure Mathematics 1	Further Pure Mathematics 2
Further Statistics 1	Further Statistics 2
Further Mechanics 1	Further Mechanics 2
Decision Mathematics 1	Decision Mathematics 2

Further Pure Maths 1: Further Trigonometry, Further calculus, Further differential equations, Coordinate systems, Further vectors, Numerical Methods, Inequalities

Further Pure Maths 2: Groups, Further Calculus, Further Matrix Algebra, Further Complex Numbers, Number Theory, Further Sequences and series

Further Statistics 1: Discrete probability distributions, Poisson and binomial distributions, Geometric and negative binomial distributions, Hypothesis testing, Central Limit Theorem, Chi Squared Tests, Probability generating functions, Quality of tests

Further Statistics 2: Linear Regression, Continuous probability distributions, Correlation, Combinations of random variables, Estimation, confidence intervals and tests using a normal distribution, Other Hypothesis Tests and confidence intervals, Confidence intervals and tests using the t - distribution

Further Mechanics 1: Momentum and impulse, Work and energy, Elastic strings and springs and elastic energy, Elastic collisions in one dimension, Elastic collisions in two dimensions

Further Mechanics 2: Motion in a circle, Centres of mass of plane figures, Further centre of mass, Further dynamics, Further kinematics

Decision Mathematics 1: Algorithms and graph theory, Algorithms on graphs, Algorithms on graphs II, Critical path analysis, Linear Programming

Decision Mathematics 2: Transportation problems, Allocation (assignment) problems, Flows in networks, Dynamic programming, Game theory, Recurrence relations, Decision analysis

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ASSESSMENT

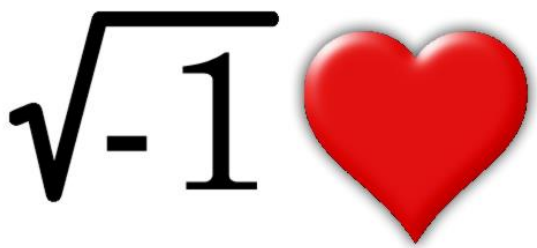
Component	Assessment	Duration	Weighting
Component 1: Core Pure Mathematics 1	Written exam	1.5 hours	25%
Component 2: Core Pure Mathematics 2	Written exam	1.5 hours	25%
Component 3: Further Mathematics Option 1	Written exam	1.5 hours	25%
Component 4: Further Mathematics Option 2	Written exam	1.5 hours	25%

CAREER OPPORTUNITIES

Employers look for hard-working, self-motivated, and intelligent people to join their staff. Obtaining a maths A-level shows that you have what it takes. You may not use algebra or probability in your job every day, but the transferable skills of analysis, logic, and problem solving will always come in handy.

Some degree subjects like physics and engineering ask for a maths A-level as part of the entry requirements. Others such as medicine and architecture don't make it a necessity, but they still have a decent amount of mathematical content. If you go in with a maths A-level, you'll have a much easier time than those who don't.

[Actuary](#), [Accountant](#), [Data analyst](#), [Investment analyst](#), [Research scientist \(maths\)](#), [Secondary school teacher](#), [Statistician](#), [Systems developer](#)



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