Further Maths

Students with a particular interest in mathematics can choose to take a second A Level in maths called Further Maths, with some choosing this as a fourth A Level. Further Mathematicians, as well as learning additional compulsory topics in pure maths such as complex numbers and proof by induction get a choice of studying further statistics, mechanics or decision maths. Many topics will require students to apply their knowledge to solving real world problems such modelling the motion of a diving board as a second order differential equation.

Course Structure & Content

Further Mathematics Year 1

Pure Core topics: series; complex numbers; numerical solution of equations; coordinate systems, matrix algebra, proof.
Applied topics – a choice of two from:
- Further Pure – inequalities, t-formulae, conic sections.
- Decision – algorithms, critical path analysis, linear programming.
- Further Statistics – Poisson distribution, combining Normal distributions.
- Further Mechanics – collisions, conservation of energy, elasticity.

Further Mathematics Year 2

Pure Core topics: inequalities; series, first order differential equations; second order differential equations; further complex numbers, Maclaurin and Taylor series.
Applied topics: Further work on the same two options chosen in Year 1.

Assessment

Four equally weighted papers of 1.5 hours each.
Paper 1 – Core 1 – pure topics from either year of the course
Paper 2 – Core 2 – pure topics from either year of the course
Paper 3 – option paper 1
Paper 4 – option paper 2

All calculators require a calculator as per A Level Maths.

Entry Requirements

For Further Mathematics students will require Grade 8 or 9 at GCSE. Students opting to take Further Mathematics must also take Mathematics A Level as a separate option.

Progression

Mathematicians are highly employable in a wide range of fields. They are valued for their problem solving and analytical skills. An A Level in Further Mathematics is acceptable as an entry qualification for the vast majority of college and university courses in just about any subject. It is required by many university maths courses