A LEVEL FURTHER MATHEMATICS

DIXONS SIXTH FORM ACADEMY

What is Further Mathematics?

Further Mathematics is a prestigious A level that is taken nationally by some of the most mathematically able sixth form students. At Dixons Sixth Form Academy students that take this course will do so in addition to their three core A levels.

All students taking Further Maths will sit the AS examination in Further Maths at the end of year one.

Why students choose this course

This course is suitable for students who have enjoyed the study of Mathematics and who are excited to learn about new branches of the subject.

What the course covers

All candidates will sit the compulsory Core mathematics module.

In Year 1 students will also study the Statistics A and the Modelling with Algorithms modules.

In Year 2 they will study the Mechanics A module.

The Core content consists of:
- Proof; Complex numbers; Matrices; Vectors; Algebra; Series; Calculus; Polar co-ordinates; Hyperbolic functions and Differential equations

The Mechanics a module consists of:
- Dimensional analysis; Forces and motion; Momentum and impulse; Centre of mass; Moments of forces; Kinematics and Work, energy and power.

The Statistics a module consists of:
- Discrete Random Variables; Bivariate Data; Chi-Squared Tests and Discrete probability distributions.

The Modelling with Algorithms module consists of:
- Algorithms; Modelling with graphs and networks; Network algorithms; Linear programming and the Simplex method.

The scheme of work has been designed so that all students sit the AS examination at the end of Year 1.

The complete specification can be viewed at www.ocr.org.uk

What students can do with this course

An A Level in Further Mathematics is useful for a wide range of careers and university as it is a facilitating subject. To study a degree in Mathematics, Engineering or Physical Sciences you do not need to have Further Mathematics, but it is a distinct advantage when applying. Indeed some offers may be reduced for students who have studied the subject.

How this course is assessed

All students will sit the AS examination at the end of Year 1.

This consists of three 75 minute papers;
- Core Pure
- Statistics
- Modelling with Algorithms

There is no link between the AS and the A Level examinations. The A level examinations take place at the end of Year 2.

Students will take four examinations.
- Core Pure
- Mechanics minor
- Statistics minor
- Modelling with Algorithms

Entry requirements

All our course entry requirements are detailed in the Entry Requirements document located in the admissions section of our website.

Further Reading?

Things to Make and Do in the Fourth Dimension, Matt Parker (Penguin, 2015). Stand-up comedian and mathematician Matt Parker uses bizarre Klein Bottles, unimaginably small pizza slices, knots no one can untie and computers built from dominoes to reveal some of the most exotic and fascinating ideas in mathematics.

The Man Who Knew Infinity R. Kanigel (Abacus, 1992) The life of Ramanujan, the self-taught mathematical prodigy from a village near Madras.

Student Profile:

Jawairiyah studied A Level Mathematics and AS Level Further Mathematics. She is now reading Mechatronics and Robotics at the University of Leeds.

" **I chose Further Maths because I really enjoyed Maths at school and Further Maths will help me get onto an Engineering course at a top University.**