Further Mathematics (AS level)

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Key topics covered

Autumn Term – Matrices and transformations, inverse matrices, complex numbers, roots of polynomials, sequences and series, vectors and 3D space,

Spring Term – Kinematics, forces and motion, friction, moments and forces, statistical problem solving, discrete random variables, probability distributions.

Summer Term – Work, energy and power, impulse and momentum, centre of mass, dimensional analysis, bivariate data, correlation and regression, chi-squared testing.

Recommended Textbook and/or resources

MEI A Level Further Mathematics Core Year 1 (AS)

MEI A Level Further Mathematics Statistics 4th Edition

MEI A Level Further Mathematics Mechanics 4th Edition

Casio FX-991CW (newer version) or FX-991EX (older version) Classwiz Scientific Calculator

All are available on Amazon or a similar website.

The school also provides online access to the whole course using the Integral website https://integralmaths.org/

Why Study the Subject/what students Like about it

Further Mathematics extends students' mathematical skills beyond those covered within the A-level Maths course to include exciting branches of maths that will challenge and engage students that have a passion for mathematics. The course develops and extends their range of mathematical skills and techniques in order to solve challenging problems which require them to decide on the best solution strategy. It also teaches them to make deductions and inferences and draw conclusions by using mathematical reasoning, proof and a range of statistical processes. Higher achieving students that wish to study an element of mathematics at university level find the course is an excellent introduction to some of the higher-level skills and techniques that they will encounter at degree level.

Opportunities outside the classroom

Last year several Year 12 students visited UEA for a day course on problem solving lead by the Advanced Mathematics Support Programme (AMSP). Students reported back that the day was really useful in helping them to structure answers to extended problems and it was a great opportunity to get a feel for university life.

Students are also given the opportunity to participate in the Senior Maths Challenge which is a 90-minute, multiple-choice math competition for students in Years 12 and 13 in England and Wales, designed to promote mathematical reasoning and problem-solving skills for students aged 16-18.

Future progression/career routes

Mathematics leads to a vast range of career options in many different fields such as engineering, computer science, architecture, medicine, finance, business, accounting and teaching.

