Maths

The linear A Level course from Edexcel covers pure and applied mathematics in the ratio 2:1. Mathematics students will cover pure maths topics such as: algebra; geometry and calculus. Applied topics include compulsory statistics and mechanics. Many topics will require students to apply their knowledge to solving real world problems such as modelling a bridge as a quadratic equation or finding the minimum amount of material needed to create the largest volume container.

Note that students with a particular interest in maths (especially those who may want to go on to study maths at university) should also seriously consider taking A Level Further Mathematics.

Course Structure & Content

Mathematics Year 1

Pure topics: algebra and functions; coordinate geometry in the (x, y) plane; sequences and series; trigonometry; exponentials and logarithms; differentiation; integration.
Applied topics: mathematical models in probability and statistics; representation and summary of data; probability; correlation and regression; discrete random variables; mathematical models in mechanics; kinematics of a particle moving in a straight line; dynamics of a particle moving in a straight line or plane; statics of a particle; moments

Mathematics Year 2

Pure topics: further algebra and functions; further trigonometry; e and the natural logarithm; further calculus; numerical methods; vectors.
Applied topics: discrete and continuous distributions in statistics; kinematics of a particle moving in a straight line or plane; work and energy; collisions; statics of rigid bodies.

Assessment

For Mathematics there are 3 equally weighted papers of 2 hours each:
Paper 1 – pure topics covered in either year of the course
Paper 2 – pure topics covered in either year of the course
Paper 3 – applied topics from either year of the course

Note all exams allow and require a calculator. The Casio FX991EX-ClassWiz calculator (or equivalent) is recommended.

Entry Requirements

Students would be expected to have achieved at least a grade 7 in Maths.

Career Prospects

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