

MATHEMATICS

SPECIFICATION

A Level AQA Mathematics (7357)

OBJECTIVES OF THE COURSE

Students should be able to:

- Recall, select and use their knowledge of appropriate mathematical facts, concepts and techniques in a variety of contexts;
- Construct rigorous mathematical arguments through appropriate use of precise statements, logical deduction and inference and by the manipulation of mathematical expressions;
- Evaluate mathematical models, including an appreciation of the assumptions made, and interpret, justify and present results from a mathematical analysis in a form relevant to the original problem;
- Read and comprehend a mathematical argument or an example of the application of Mathematics and have an awareness of its limitations.

CONTENT AND ASSESSMENT

Mathematical argument, language and proof; Problem solving; Mathematical modelling

Pure Maths

Proof, Algebra and functions, Coordinate geometry in the (x,y) plane, Sequences and series, Trigonometry, Exponentials and logarithms, Differentiation, Integration, Numerical methods, Vectors

Statistics

Statistical sampling, Data presentation and interpretation, Probability, Statistical distributions, Statistical hypothesis testing

Mechanics

Quantities and units in mechanics, Kinematics, Forces and Newton's laws, Moments

Assessment is by **three** 2-hour written exam papers (each worth 33 $\frac{1}{3}$ %) :

Pure Maths, Pure and Mechanics, Pure and Statistics

METHODS OF STUDY

Students are taught by teacher exposition, group work, class discussion, investigation and individual research and practice.

SPECIAL FEATURES OF THE COURSE

Students have the opportunity to participate in the UK Senior Maths Challenge (and follow-up competitions) and have the chance to attend the Maths Inspiration Lectures.

Students who are aiming for a career or university course with a high mathematical content might also like to consider opting for A Level Further Maths as well.