

POST 16 SUBJECT OVERVIEW

Post 16 Subject Overview

Name of Subject - A Level Mathematics

Which Examination Specification is Studied for this Course?

AQA

Why should I study this course?

Mathematics is the language of the sciences. In A Level Mathematics you will not only learn advanced techniques, concepts and equations but you will also develop your skills of proof, problem solving and mathematical modelling. Though a large part of the course is made up of pure mathematics (algebra, geometry and calculus) we will apply these skills to two main areas: statistics and mechanics. In statistics we will analyse a large data set, search for patterns and test hypotheses by calculating probabilities. In mechanics we study forces and motion and use this to model real life situations.

Who is suitable to study this course?

If you enjoyed problem solving and algebra from GCSE Mathematics, then A Level Mathematics is the course for you. It links strongly with Physics and other scientific subjects. Careers involving mathematics are wide-ranging, from computing and finance to engineering and data science.

What GCSE Qualifications Support the Study of this Course?

GCSE Mathematics (essential)

GCSE Statistics

L2 Certificate in Further Mathematics

What are the Qualification Requirements for this Course?

Minimum of a Grade 6 in GCSE Mathematics with strong algebraic manipulation skills.

How is the Course Delivered?

The course is usually shared between two teachers, with 5 hours of lessons per week. Students are expected to spend at least the same amount of time doing independent study. The course is delivered via a mixture of theory, examples and practice: a similar style to what students will be used to from GCSE study. Students will make use of Google Classroom to study relevant materials, submit homework assignments and review their feedback.

Subject Overview		
Half Term	Year 12	Year 13
Autumn 1	<ul style="list-style-type: none"> • Indices and Surds • Quadratics • Inequalities • Straight lines and Circles • Polynomials • Graphs and Transformations • Differentiation 	<ul style="list-style-type: none"> • Review of Year 12 topics • Further Differentiation • Further Integration • Further Trigonometry
Autumn 2	<ul style="list-style-type: none"> • Trigonometry • Integration • Exponentials and Logarithms • Vectors 	<ul style="list-style-type: none"> • Numerical Methods • Partial Fractions • Parametric Equations • Differential Equations
Spring 1	<ul style="list-style-type: none"> • Statistics: data representation • Mechanics: kinematics 	<ul style="list-style-type: none"> • Statistics: further probability, normal distribution • Mechanics: projectiles, equilibrium, resolving
Spring 2	<ul style="list-style-type: none"> • Statistics: probability distributions • Mechanics: forces and Newton's laws 	<ul style="list-style-type: none"> • Statistics: further hypothesis testing • Mechanics: statics and dynamics, moments
Summer 1	<ul style="list-style-type: none"> • Statistics: hypothesis testing • Mechanics: forces and Newton's laws • Binomial expansion • Proof 	<ul style="list-style-type: none"> • Revision
Summer 2	<ul style="list-style-type: none"> • Revision • A Level topics: functions, sequences and series, radian measure 	<ul style="list-style-type: none"> • Revision

How is the Course Assessed?

Assessment is by examinations. There are three papers, taken at the end of year 13: pure, pure and mechanics, pure and statistics. Each paper is 2 hours and worth 100 marks (equally weighted). Regular Praising Stars assessments will take place on specific topics to help provide an indication of attainment and provide feedback for students to allow them to improve.

What is our Recommended Subject Reading list to Support your Study?

Any new specification (2017 or newer) A Level Mathematics textbook would be a helpful companion guide to the course; we aim to provide textbooks for students where possible. Our specification is AQA, however all exam boards follow the same content.

