Mathematics

Edexcel A-level Mathematics (9MA0)

Head of Department: Mr Nick Carpenter

Introduction

Mathematics is a highly challenging and interesting subject at A-level, and the course is perfect for those who enjoy logical thinking, complex problem solving and for those who want a solid mathematical foundation. A-level mathematics isn't just about formulas; it's a dynamic subject that hones analytical skills applicable across various fields. It is versatile, opening doors to careers in science, engineering, economics, and more, as well as helping build confidence and resilience for future challenges. It is a subject that underpins everything prevalent in the world around us, and therefore an exciting choice at A-level.

Subject Requirements

You must achieve at least a Grade 8 in IGCSE mathematics to be eligible to study A-level mathematics at Epsom College, and those who are not already working at this level of attainment should consider other options. Strong algebraic skills and the ability to communicate mathematically are required, and you must therefore already be working confidently and with clear structure in your written work.

Course Outline

There are three exam papers taken at the end of the second year of the course. Each paper is two hours long and the papers are all weighted equally.

Papers 1 and 2: Pure Mathematics

Topics: Proof, Algebra and functions, Coodinate geometry, Sequences and series, Trigonometry, Exponentials and logarithms, Differentiation, Integration, Numerical methods, Vectors.

Paper 3: Statistics and Mechanics

Statistics topics: Statistical sampling, Data presentation and interpretation, Probability, Statistical distributions, Statistical hypothesis testing.

Mechanics topics: Quantities and units in mechanics, Kinematics, Forces and Newton's laws, Moments.

Higher Education and Careers

Mathematics is a highly desirable A-level subject for universities that demonstrates the capacity for advanced problem solving. A-level maths is desirable for many degrees that have a mathematical element, but essential for popular degrees such as engineering, natural sciences, economics and physics at leading universities. Those wishing to pursue a mathematics degree should also take A-level further mathematics.

What should I study alongside mathematics?

Further mathematics and physics are A-level subjects that require students to study A-level mathematics alongside. It is also very useful alongside the other sciences and economics.