

Mathematics

AS/A Level

OCR (MEI Syllabus)

Structure & Specification

Year 1- AS GCE Mathematics (3895)

Year 2- A2 GCE Mathematics (7895)

Syllabus details

OCR (MEI) 7895 syllabus is followed.

What does the course include?

Year One- AS

- Introduction to Advanced Mathematics (C1). This unit builds and develops the skills students have learnt at GCSE to prepare for advanced work. The unit teaches algebra, co-ordinate geometry, polynomials, curve sketching, the concepts of mathematical proof and mathematical modelling.

- Concepts For Advanced Mathematics (C2). Further algebra including logarithms. Arithmetic and geometric sequences are studied in depth. Trigonometry is introduced as is the theory of calculus. The language of functions is used and the connection between functions and graphs is studied.

- Either Statistics 1 (S1) or Mechanics 1 (M1).

S1 looks at statistical modelling and sampling, followed by clear presentation of single variable data and the use of measures of central tendency and dispersion. Probability theory is studied and hypothesis testing is introduced using the binomial distribution.

M1 is an introduction to mathematical modelling, kinematics, statics and dynamics. Vectors are used to describe forces and motion in two and three dimensions. Newton's laws of motion are applied throughout and the theory of projectiles is introduced.

Year Two- A2

- Methods For Advanced Mathematics (C3). There is a particular emphasis on calculus theory and methods. Exponentials and logarithms are also explored. In this unit candidates are required to undertake a piece of coursework on the numerical solutions of equations.

- Applications Of Advanced Mathematics (C4). Explores the application of earlier work to solve real-world problems. Further algebra, calculus and trigonometry are taught and parametric equations are introduced. Vectors also form an important part of the unit.

- Mechanics 1 or Statistics 1, whichever module wasn't taken at AS.

How will I learn?

A variety of methods will be used, involving investigative work as well as the study of theory. Although the course is theoretical by its very nature, mathematics is also an important tool for studying the real world and connections with practical situations will be made whenever possible.

How will my work be assessed?

There will be an exam lasting one hour and thirty minutes for each unit. There will also be coursework for C3 and a one hour comprehension paper for C4. Calculators are allowed in examinations for all units except C1.

What skills will I need to be successful in this subject?

There is a gap between GCSE and A level mathematics but essentially you will be building on the work you did at GCSE particularly by doing further algebra. You should also enjoy mathematics if you are to make significant progress with it.

What are the entry requirements?

As well as looking at their GCSE mathematics results, we may also test students before enrolling them. Students studying mathematics at A level must have a grade B or above at GCSE.

What are the opportunities after this course for further/higher education and employment?

Mathematics is a very well respected academic subject and can help gain entry to an exceptionally wide range of university courses. As well as being very useful in itself it is also seen as a good indicator of academic ability and as such is valued both by employers and universities.