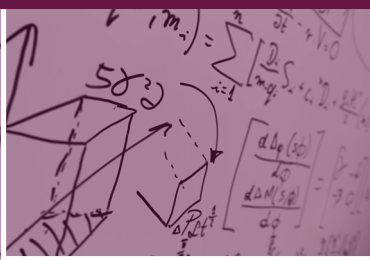
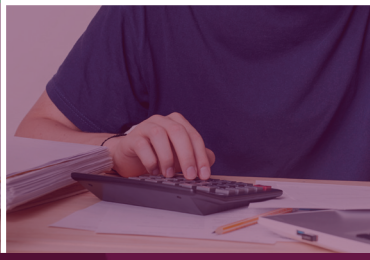
Mathematics

Pearson Edexcel Specification: 8MA0

The A Level **Mathematics** course is designed to help students develop strong analytical, problem-solving and logical reasoning skills through the study of pure mathematics, statistics and mechanics.

The course provides an excellent foundation for further study of Mathematics (or related subjects such as Engineering, Economics or the Sciences) in Higher Education.





> *Austin Friars exists to provide excellent education inspired by our Augustinian values.*

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In Omnibus Caritas

AUSTIN FRIARS

Mathematics

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VI Form Mathematics courses are designed to encourage students to:

- develop their understanding of mathematics and mathematical processes in a way that promotes confidence and fosters enjoyment.
- extend their range of mathematical skills and techniques and use them in more difficult unstructured problems.
- recognise how a situation may be represented mathematically and understand the relationship between "real world" problems and standard and other mathematical models and how these can be refined and improved.
- develop an awareness of the relevance of mathematics to other fields of study, to the world of work and to society in general.
- take increasing responsibility for their own learning and the evaluation of their own mathematical development.
- prepare thoroughly for exams.

Course Content:

During the course students cover pure maths, applied maths and statistics. The students are assessed on their ability to use these techniques. They are also expected to be able to communicate and reason mathematically and solve problems both within mathematics and other contexts.

A Level Mathematics builds on the subjects covered at GCSE. The course can be broadly split into three sections:

- Pure Maths - This is basically algebra. Topics include solving equations, proof, sequences, differentiation and integration.
- Applied Maths. Topics include vectors, kinematics, forces and moments.
- Statistics – the study of data and probability. Topics include hypothesis testing, sampling and data representation.

Examination Structure/Assessment:

The course is assessed by three exam papers, each 2 hours long, in the summer of the U6th. There is no coursework element to the course. Pupils will sit the Pearson Edexcel A Level Mathematics exam.

Entry Requirements:

How difficult is A Level Mathematics? Is it essential to obtain a high GCSE grade? Interest, enthusiasm, motivation and determination are more important than a high GCSE grade but experience over past years suggests that GCSE grades will give a good indication of the results which may be expected at A Level.

Candidates are generally accepted onto the A Level Maths course provided that they achieve a grade 9, 8 or 7 at GCSE, but candidates who achieve other grades will be considered on an individual basis.

Universities and Careers:

Many students who take Mathematics at A Level go on to university to read such subjects as Mathematics, Computer Studies, Physics, Chemistry, Statistics, Engineering, Economics, Management Science, Business Studies or Accountancy. Some students opt for joint courses, e.g. Mathematics with Computing, Mathematics with Statistics, Mathematics with Economics or Mathematics with Philosophy.

Some students choose their courses with a view to entering a highly mathematical profession in which they can directly apply the skills they have acquired. For the majority, however, the importance of a mathematical training lies in the resulting ability to think logically and independently. Employers usually consider that anyone capable of coping with advanced mathematical concepts will be an asset to their organisation. The main areas of employment with a significant mathematical content include actuarial work, accountancy, banking, computing, management services, scientific and technical research, engineering, statistics and teaching.

The Russell Group of leading universities lists Mathematics as a facilitating subject. These are subjects that are required for university courses more often than others.