

AS Level Further Mathematics

Board and Specification: **Edexcel AS further Mathematics**

Staff: **Mr S Reid (KS5 Coordinator)**

Subject specific entry requirements:

- Grade 7 in GCSE Mathematics.
- Further Mathematics is aimed at students who are both strong mathematicians and show a real passion for the subject.
- Students should be fluent in both their algebraic skills and trigonometry skills from GCSE.
- Suitable candidates for the course are those who enjoy working independently to solve complex mathematical problems.
- At the start of the course, students will complete an A-level transition task.
- Students will be expected to purchase a Casio CG-100 graphical calculator.

What skills are required of students?

Independent learning of definitions and reaction mechanisms and understanding of the concepts introduced during the course.

Modules titles and codes:

- **8MA0/01 Paper 1: Further Mathematics Core Pure 1/AS**
- **8FM0/2H Paper 2: Further Mechanics 1 and Decision Mathematics 1.**

Both papers are equally weighted, and they are examined in the summer, 2028.

8FM0/01: Further Mathematics Core Pure 1/AS

Proof, complex numbers, matrices, further algebra and functions, further calculus, further vectors

8FM0/2H: Further Mechanics 1

Momentum and Impulse
Work Energy and power
Elastic Collisions in one dimension

8FM0/2H: Decision Mathematics 1

Algorithms and graph theory
Algorithms on graphs
Algorithms on graphs II
Critical path analysis
Linear programming

What kinds of work will you do in class and at home?

Home learning tasks could involve embedding the learning from the lesson using questions from textbooks or worksheets from alternative resources or from past papers. Tasks could also involve

pre-reading or revision in preparation for a test or research into a topic. On occasion, students may be asked to prepare a task or an activity that will be used in a subsequent lesson.

The content of the AS Further Mathematics course is delivered over 1 year in lessons and through home learning tasks with examinations being sat at the end of Year 12. Students will be assessed regularly to track progress.

What other A-levels does your subject connect well with?

Psychology, Geography, Physics, Chemistry, Biology, Business and Computing.

In some instances, there is a direct overlap in the contents such as with forces, studied in Physics A-Level and statistical testing which features in Psychology A-level.

What types of university course will be helped by this AS-level?

There are many university courses that require mathematics at A-level including: actuarial studies, engineering, chemical engineering, computing, dentistry, environmental and earth sciences, economics, electronic engineering, pharmacy, physics and of course mathematics and statistics.

Some courses require two or three A-levels from a selection of say 4 subjects of which Mathematics A-level is often an option e.g. Geology or Medical Sciences. For many courses, even though A-level Mathematics is not a prerequisite, it is very useful and AS Further Mathematics is a qualification very much sought after by universities offering a degree in mathematics or engineering.

Demand for jobs with Science, Engineering and Technology skills is increasing enormously and these jobs require maths skills. Highly numerate disciplines are in great demand from employers and young people with maths qualifications and degrees will find that their degrees can open doors to exciting and rewarding careers.