Sir Robert Pattinson Academy
Via diversa vita una

A-Level Mathematics – Further

For most Science, Technology, Engineering and Mathematics (STEM) degree course A-Level Mathematics is a requirement and AS or A-Level Further Mathematics is often a preferred subject. Anyone applying to study a degree in a STEM subject should consider taking Further Mathematics to at least AS level as the additional content helps ensure a successful progression to University. AS Further Mathematics is accessible to most A-Level Mathematics students. Having A-Level Further Mathematics on your University application will make you stand out.

Further Mathematics can only be studied as a fourth A-Level option, alongside A-Level Mathematics and two further subject options.

Qualities and qualifications needed

Students studying Mathematics will need:

- A Grade 8 or above at GCSE Mathematics.

- Very strong algebra skills from GCSE study.

- Resilience and problem solving skills.

- A willingness to put in the required study time beyond attending the classroom lessons.

- An understanding that Further Mathematics is taken as a 4th A-Level subject and the increase demand on workload and study this requires from you.

How will the course be assessed?

Each chapter of work is formally assessed using professionally produced assessment materials.

Assessments last 60 minutes and improvement work is undertaken after each round of assessment.

Students can expect to have one assessment per strand (Pure, Mechanic and Statistics) each term.

Course content

The A-Level course is split into three main strands each with several associated topics. The strands and main topics are:

Pure Mathematics

In this area you will study topics such as complex numbers, matrices, further calculus and differential equations, hyperbolic functions and rigorous mathematical proof.

Mechanics

Topics include momentum, circular motion, centre of mass and moments.

Decision Mathematics

Discrete Mathematics: The module includes graphs, networks and linear programming as well as zero sum games and binary operations.

Examinations

At SRPA we follow the Edexcel syllabus and scheme of work for A-Level Further Mathematics. Examination is by four 1 hour 30 minutes examinations at the end of year 13. Course content in the examination is split as follows:

Paper 1
Core Pure Mathematics – 1 hour 30 minutes

Paper 2
Core Pure Mathematics – 1 hour 30 minutes

Paper 3
Further Mechanics 1 – 1 hour 30 minutes

Paper 4
Decision Mathematics 1– 1 hour 30 minutes

Students sit formal mocks at the end of year 12 provided by the Edexcel examination board.

Methods of teaching and learning

Students have nine hours per fortnight of taught lessons and due to the high demand of the course will be expected to complete pre-reading and home study tasks each week.

Teaching of Mathematics to this level requires experienced and knowledgeable teaching staff and here at SRPA were are delighted to have a department with specific specialisms in each strand of study.

> This is a calm, happy and caring school. Pupils flourish as a result of the good quality of education and the opportunities open to them.

SRPA student