

Further Mathematics A Level



INTRODUCTION TO THE COURSE

A level Further Mathematics at The Grey Coat Hospital covers a broad range of study, encompassing complex numbers, matrices, hyperbolic trigonometry and advanced calculus. There are optional papers in further pure, mechanics and statistics.

If you have a flair for Mathematics and relish tackling challenging concepts and making connections between different areas of your mathematics knowledge then this is the course for you.

All students studying Further Mathematics A Level must also take Mathematics A Level. You will learn the content for Mathematics A Level in Year Twelve and the content for Further Mathematics A Level in Year Thirteen and sit all the examinations at the end of Year Thirteen.

To succeed in this course you need to be prepared to put in a significant amount of work in addition to that completed in lessons and for homework. The Mathematics department is here to support you in your learning and a dedicated Mathematics Support Club for KS5 runs two lunchtimes a week.

WHY SHOULD I STUDY THE COURSE?

Further Mathematics is often referred to as the hardest A Level subject. It is a difficult A-Level but a very rewarding one too. It is a versatile qualification, well respected by employers. Careers for people with good mathematics skills and qualifications are not only well paid, but they are also often interesting and rewarding.



Through solving problems, you develop resilience and are able to think creatively and strategically. The writing of structured solutions, proof and justification of results help you to formulate reasoned arguments.

The mathematical skills you learn in A-Level Further Mathematics are of great benefit in many first year degree courses Physics, Engineering and Economics.

HEAD OF DEPARTMENT

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EXAM BOARD

EDEXCEL

PROGRAMME OF STUDY

Core Pure Mathematics 1

90 minute paper

25% of total A Level

Core Pure Mathematics 2

90 minute paper

25% of total A Level

Option Paper 1

90 minute paper

25% of total A Level

Option Paper 2

90 minute paper

25% of total A Level

Any of the Core Pure content could be assessed on either paper.

Calculators are permitted for all papers.

EXAMINATION RESULTS

In 2018, 50% of students in the cohort achieved A*. Overall, students achieved 67% A*-B, and 100% A*-C. Students went on to study Mathematics, Computer Science and Engineering.

EXAMINATION TOPICS

The main topics for Core Pure Mathematics 1&2 are:

Proof, Complex numbers, Matrices, Further algebra and functions, Further calculus, Further vectors, Polar coordinates, Hyperbolic functions, Differential equations

The Option Papers enable us to tailor the course to the students and their university and career aspirations. However, all students in the Further Mathematics class must study the same optional units.

For 2018/19 we will be providing Further Pure Mathematics 1 and Further Mechanics 1. There are options to study more pure mathematics or Further Statistics too.

Calculators

There are specific calculations you need to be able to complete for A-Level Mathematics that are not supported on a standard scientific calculator. The calculator we recommend for you for A-Level Mathematics is the Casio fx-991EX Classwiz. This calculator will enable you to carry out a huge range of essential and useful calculations quickly and effectively.

ENRICHMENT ACTIVITIES

There is a broad range of enrichment opportunities for our mathematicians. These include visits to lectures and events, e.g. Andrew Wiles at the inaugural Oxford Mathematical Institute London lecture, MathsFeast and The Royal Institution; participation in the UKMT Senior and Group challenges; support with Oxbridge interview preparation and our mentoring programme to support Y11 students.

The Maths Prefect works with KS5 mathematicians to coordinate some of these, e.g. assemblies for KS3 & KS4 students by KS5 students.

FUTURE CAREERS

Further Mathematics A Level is essential for further study in Mathematics, Engineering, Economics and a range of other disciplines. Studying Further Mathematics A level opens doors to a huge range of future courses and careers and is counted as a 'facilitating' subject by the Russell Group of universities. Students go on to study Mathematics, Engineering, Computer Science, Physics and a range of other courses at university.

We regularly advertise and promote a range of university taster days, lectures, open days and summer schools including on the Oxford application process. We give in depth support to students preparing to apply to university by providing reading lists and help with writing personal statements. We also run specific Oxbridge mock interviews.