Post 16 Subject Overview

Name of Subject
A-level Further Mathematics

Which Examination Specification is Studied for this Course?
AQA A-level Further Mathematics 7367
The Ofqual qualification accreditation number (QAN) is 603/1841/7

Why should I study this course?
This course is for students who really enjoy the challenge that maths presents. It is also designed for students with an enthusiasm for Mathematics, many of whom will go on to degrees in Mathematics, Engineering, the Sciences and Economics. Those that study further mathematics at A level are put in an advantageous position when it comes to those university STEM courses. You will have already studied many things that are in the course that those who have not studied further will have never seen. In particular topics in; complex analysis and differential equations.

Who is suitable to study this course?
This course is for those who really love the challenge of mathematics and are keen to extend their knowledge and understanding of maths. For any students wishing to pursue a degree in Mathematics or a related field such as Engineering at Higher Education, this course would be suitable.

What GCSE Qualifications Support the Study of this Course?
GCSE Mathematics, GCSE Physics, GCSE Statistics (NB - Physics and statistics are not a compulsory requirement).

What are the Qualification Requirements for this Course?
To study A level further mathematics you will also need to be studying A level Mathematics. You will also ideally have at least a number grade 7 in GCSE mathematics or higher.

How is the Course Delivered?

The teaching of the course is usually shared across two teachers, each delivering 2 hours per week.

There are after school sessions provided to support learning outside of the classroom. It is expected that you work for an additional hour for each lesson you attend.

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Half Term	**Year 12**	**Year 13**
Autumn 1	HT1 is focused on pure mathematics to include; Complex numbers Matrices Polar Coordinates. Polynomials with related roots.	During half term 1 we go deeper into calculus, matrices and complex numbers to include; De Moivre's Theorem. Improper integrals. Eigenvalues and vectors.
Autumn 2	HT2 extends to the first optional content, discrete maths, as well as pure mathematics; Series and limits. Graphs of rational expressions. Graph theory. Networks. Critical path analysis.	The start of the optional content starts this half term which includes statistics and discrete maths; Further networks. Further graph theory. Further continuous random variables.
Spring 1	HT3 introduces the next lot from the optional content, statistics and pure mathematics; Discrete random variables. The Poisson Distribution. Further Calculus.	Further work on the optional content part of the course continues across this half term; Yate's correction for Chi-Squared hypothesis tests. Simplex method for linear programming.

Spring 2	HT3 focuses in on on; Vector geometry. Proof Errors in hypothesis testing. Continuous random variables. Game theory. Binary operations.	The last part of the pure mathematics for the course is delivered across this half term to include; Differential equations (with connected variables and second order differential equations). More hyperbolic functions and how they can be used in calculus.
Summer 1	The last of the year 1 content is covered this half term as well as some work on hyperbolic functions.	Most of the content has been delivered at this point. Moving forward, students revise content from across the 2 years.
Summer 2	Revision of topics from year 1 content.	

How is the Course Assessed?

The course is externally assessed through three 2 hour papers sat at the end of year where all topics covered across the 2 year course are assessed. Paper 1 and 2 assess only pure content where the optional content of discrete and statistics elements are only assessed in paper 3.

Your progress will be monitored through Praising Stars assessments completed in the classroom every half term along with mock examinations that take place after the Christmas break and Easter.

What is our Recommended Subject Reading list to Support your Study? -

There are some excellent resources to bridge the gap between GCSE and A level mathematics. One of the best is the Hegarty Maths website. If your school has a subscription you can access the transition tasks and videos provided there. Failing that, one of the best resources is A Head Start to A level Mathematics by CGP.

A particularly good YouTube channel is ExamSolutions who provides many solutions to questions, tutorials on topics and live streams for students to work along with.