

POST 16 SUBJECT OVERVIEW

Name of Subject -

A-level Further Mathematics

Which Examination Specification is Studied for this Course?

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 those students who really enjoy the challenge that maths presents. It extends upon some of the ideas you'll learn in A level mathematics but also introduces topics that will be completely new to you.

This course is for those people who want to take maths further than A level, looking closely at STEM courses at university or potentially higher level apprenticeship courses.

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 can be very demanding at times. You'll likely be thinking of taking STEM further than A level one day already.

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 shared across two teachers, each delivering 4 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.

Subject Overview		
Half Term	Year 12	Year 13
Autumn 1	HT1 is focused on pure mathematics to include; <ul style="list-style-type: none">- Complex numbers- Matrices- Polar Coordinates.- Polynomials with related roots.	During half term 1 we go deeper into calculus, matrices and complex numbers to include; <ul style="list-style-type: none">- De Moivre's Theorem.- Improper integrals.- Eigenvalues and vectors.
Autumn 2	HT2 extends to the first optional content, mechanics, as well as pure mathematics; <ul style="list-style-type: none">- Series and limits.- Graphs of rational expressions.- Momentum.- Energy and work.	The start of the optional content starts this half term which includes statistics and mechanics; <ul style="list-style-type: none">- Circular motion.- Energy models.- Further continuous random variables.
Spring 1	HT3 introduces the next lot from the optional content, statistics and pure mathematics; <ul style="list-style-type: none">- Discrete random variables.- The Poisson Distribution.- Further Calculus.	Further work on the optional content part of the course continues across this half term; <ul style="list-style-type: none">- Centre of mass.- More circular motion- Confidence intervals.- Yate's correction for Chi-Squared hypothesis tests.

Spring 2	HT3 focuses in on on; <ul style="list-style-type: none"> - Vector geometry. - Proof - Errors in hypothesis testing. - Continuous random variables. 	The last part of the pure mathematics for the course is delivered across this half term to include; <ul style="list-style-type: none"> - 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 2. These papers cover all topics covered across the 2 year course. The mechanics and statistics elements are only assessed in paper 3.

Your progress will be monitored through controlled 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 I have seen 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.