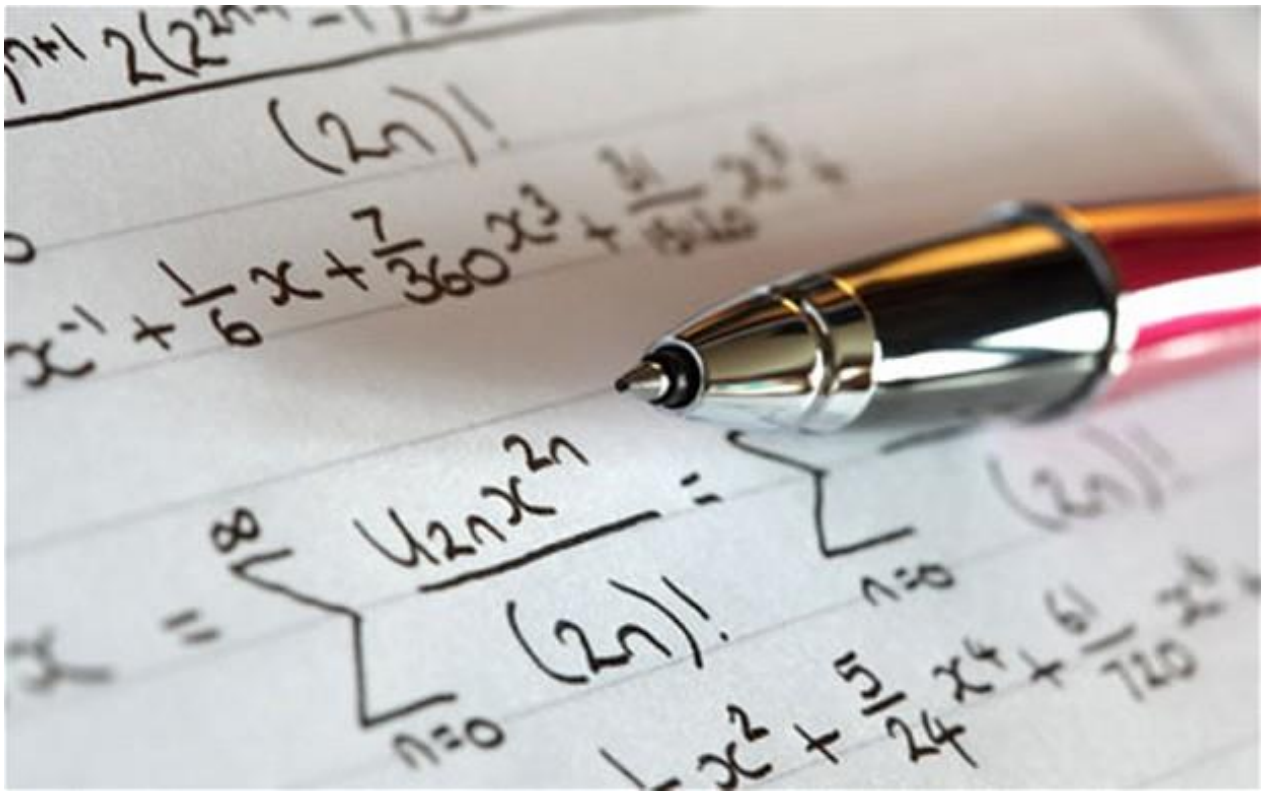
Further Mathematics

AS Level and A Level

Summer Work 2021



Further Mathematics is a qualification which both broadens and deepens the mathematics covered in A level Mathematics. Further Mathematics is taken alongside A level Mathematics.

WHAT WILL I NEEDTO BE SUCCESSFUL ON THIS COURSE? To succeed at Further Mathematics, you will need 5 GCSEs at A*-C grade (including English and Mathematics) and need to be taking A level Mathematics. Ideally you will have gained a Grade 8 or 9 at GCSE level in Mathematics but we will look at all students on an individual basis to see if they are suitable for the course. Further Mathematics is definitely only suitable for people with a strong motivation to study Mathematics.

WHAT WILL I DO?

Further Mathematics will broaden your understanding of the subject. The pure sections will introduce you to some amazing concepts.

For example,

- complex and imaginary numbers -(widely used in electronic engineering and other fields;
- Conic sections – we are used to studying parabolas but what about circles, ellipses and hyperbolas?
- Hyperbolic Functions – you will never look at a suspension bridge again without considering these!
- Matrices - used in 3D graphics and physical modelling
- inductive proof - a beautiful idea

As well as the pure topics you will study two of the applied topics (in combination with your Mathematics A level). At Okehampton College we cover - Statistics: The study and analysis of data and Mechanics: the mathematics of physics (forces, centres of gravity, collisions etc.)

WHAT CAREERS WOULDTHIS BE SUITABLE FOR?

Having a Further Mathematics A level identifies you as someone who has a high level of mathematical ability and has been trained in logical thinking and analysis. This is a big advantage in most areas of life. However, if you are interested in studying a mathematical subject at degree level (e.g. Mathematics, Engineering, Physical Sciences, Computing or similar) then you will find that many of the better universities often give lower offers to candidates with Further Mathematics.

WHERE CAN I FIND OUT MORE?

Email scarter@okehamptoncollege.devon.sch.uk

AQA | AS and A-level | Further Mathematics | Specification at a glance

Summer Work to prepare for Further Maths.

Task 1.

Algebra

Your basic algebra skills will need to be quick and accurate to deal with the content of Further Maths. This means that you can factorise quadratics with coefficients of x, you can solve simultaneous equations with non-linear equations by substituting and you can use all three methods to solve quadratic equations. All of these could/will involve non-integer numbers so your fraction work also needs to be strong particularly simplifying and manipulating algebraic fractions.

Therefore ensure that you use the booklet given to you for Maths wisely and focus on the algebra sections. If you were at Okehampton college previously you should still have access to Hegarty Maths where you can find plenty of practice questions

Task 2

Have a look at the two Further Maths videos here. Matrices is a topic you may be familiar with if you completed the Level 2 AQA Certificate in Further Maths during Year 11. Complex numbers are an integral part of higher maths and you will become as familiar with these as you are now with integers, rational and irrational numbers. Both videos have a DESMOS activity embedded. This is a free maths graphing tool that can be downloaded onto any device including phones. The use of technology can really help you explore your maths and find connections and properties for yourself so have a play and have some fun!

Any questions please email scarter@okehamptoncollege.devon.sch.uk