



MATHEMATICS (FURTHER)

A LEVEL (TWO YEARS)/ AS LEVEL (ONE YEAR)

WHAT YOU WILL LEARN

Mathematics (Further) is a fascinating course delving into a variety of different areas and is taken in addition to Mathematics. Amongst myriad other topics you will learn about imaginary and complex numbers, using algorithms to solve real world problems, various discrete probability distributions and how objects behave in collisions.

Mathematics (Further) is not only complimentary to your study of Mathematics but also, in many cases, introduces you to new and interesting concepts. As a student of Mathematics (Further) you will enhance your problem solving skills and extend your knowledge of mathematical terminology.

WHAT YOU NEED:

- GCSEs to include a minimum Grade 7 in Mathematics (Grade 8 recommended).
- Minimum average GCSE score of 5.5.

HOW YOU WILL BE ASSESSED

- 100% examination

FIRST YEAR A LEVEL & AS TOPICS

Core

- Matrices
- Complex Numbers
- Roots of Polynomials
- Sequences and Series
- Vectors

Modelling with Algorithms

- Algorithms
- Modelling with Graphs and Networks
- Linear Programming

Statistics

- Discrete Random Variables and Probability Distributions
- Bivariate Data
- Chi-Squared Tests

SECOND YEAR A LEVEL TOPICS

Core

- Vectors
- Matrices
- Proof by Induction
- Further Calculus
- Polar Coordinates
- Maclaurin Series
- Complex Numbers

Mechanics

- Kinematics
- Forces and Motion
- Moments of a Force
- Work, Energy & Power
- Impulse and Momentum
- Centre of Mass
- Dimensional Analysis

WHERE CAN MATHEMATICS (FURTHER) TAKE YOU?

UNIVERSITY COURSES

- Mathematics
- Computer Science
- Engineering
- Medicine
- Physics
- Chemistry

CAREER PATHWAYS

- Engineering
- Architecture
- Statistics
- Programming
- Actuary
- Teaching
- Accountancy

ADDITIONAL INFORMATION

Students can benefit from frequent guest speakers from academics and industry professionals and take part in numerous national competitions.