

Further Mathematics A Level



Features of the Course:

- Plan and interpret information from different sources
- Carry out multi-stage calculations and be able to form extended lines of reasoning
- Present findings, explain results and justify choice of methods
- Spiritual, moral, ethical social and cultural issues relating to mathematics

AS Content

Further Pure

Complex Numbers, Four operations, Roots of Polynomials, Argand diagrams, Loci, Matrices and Transformations, Determinants and Inverses in 2D, Invariant points and lines, Functions and Algebra, Calculus with Volumes of Revolution, Vectors, Scalar and Vector Product, Polar Coordinates, Hyperbolic Function Definitions

The two taught applied options.

Statistics

Introduction to Discrete and Continuous Random Variables and Expectation, Poisson Distribution, Type I and Type II Errors, Chi tests for Association

Mechanics

Introduction to Dimensional Analysis, Momentum and Collisions, Work, Energy and Power, Circular motion

A Level Content

Further Pure

Proof by Induction, Complex Numbers, Matrices and Transformations, Solutions of Linear Equations, Determinants and Inverses in 3D, Eigenvalues and Eigenvectors, Maclaurin Series, Calculus, Polar Coordinates, Hyperbolic Functions, Differential Equations, Trigonometry, Coordinate Geometry, Numerical Methods

The two taught applied options.

Statistics

Discrete and Continuous Random Variables and Expectation, Poisson Distribution, Type I and Type II Errors, Chi tests for Association, Exponential Distribution, Inference

Mechanics

Momentum and Collisions, Work, Energy and Power, Circular motion, Centre of Mass and Moments

Methods of Assessment:

A2 Course: There are four papers overall, two papers consisting of Further Pure, and the other papers consisting of two applied options. These areas are each assessed by a 1.5 hours written paper at the end of the course.