

Maths Key Stage 5

At KS5 the OCR Specification is followed.

Full details can be found at www.ocr.org.uk

AS Level Maths Course Outline

Colfox

Core 1

Surds

Polynomials

Quadratics

Inequalities

Some Important Graphs

Circles

Transforming Graphs (Ch. 10)

Core 2

Sine and Cosine Rules

Trigonometry

Introduction to Logarithms

Radians

Sequences and APs

Geometric Progressions

Binomial Theorem

Integration and Trapezium Rule

Exponentials and Logarithms

Factors and Remainders

A2 Maths Course Outline

Core 3

Differentiating Exponentials and Logarithms

Integrating Exponentials and Logarithms

Beaminster

Core 1

Indices

Coordinates, Points and Lines

Differentiation

Investigating Shapes of Graphs

Applications of Differentiation

Mechanics 1

Velocity and Acceleration

Constant Acceleration

Forces and Horizontal Motion

Vertical Motion

Motion Under Gravity

Momentum

Resolving Forces

More Resolving and Friction

Newton's Third Law

Combining and Splitting Forces

Non-constant Acceleration

Statistics 1

Representing Data

Measures of Location

Chain Rule
Product Rule
Quotient Rule
Reciprocal Trigonometric Functions
Addition Formulae
Double Angle Formulae
 $a\sin x + b\cos x$
Inverse Trigonometric Functions
The Modulus Function
Solving Equations Numerically
Volumes of Revolution
Simpson's Rule

Measures of Spread
Introducing Probability
Permutations and Combinations
Probability Distributions
Two Discrete Distributions
Expectation and Variance
Correlation
Regression

Core 4

Differentiating and Integrating Trigonometric Functions
Implicit Differentiation
Integration by Parts
Integration by Inspection or by Substitution
Parametric Equations
Parametric Differentiation
Binomial Expansion
Rational Functions and Algebraic Division
Partial Fractions
First Order Differential Equations
Vectors in 2 and 3 Dimensions
Scalar products

AS Level Further Maths Course Outline

Decision Maths 1

Sorting Algorithms

Packing Algorithms

Graphs and Networks

Minimum Connector Problems

Finding The Shortest Path

Route Inspection Problem

Travelling salesperson Problem

Linear Programming

Simplex Algorithm

Decision Maths 2

Matching Problems

Allocation Problems

Maximising Flow in a Network

Extending the Labelling Procedure

Critical Path Analysis

Dynamic Programming

Game Theory

Further Pure 1

Introduction to Matrices

Determinants and Inverses of 2×2 Matrices

Matrix Transformations

Determinants and Inverses of 3×3 Matrices

Complex Numbers

Modulus and Argument

Summing Series

Mathematical Induction

Roots of Quadratic and Cubic Equation

