

PCHS Curriculum Information

Course Title: A Level Further Maths	Exam Board: AQA	Specification Code: 7367
How will students be assessed? A level Further Mathematics is a linear course which is assessed with three examinations. Each exam is marked out of 100 and lasts for 2 hours. The papers are all calculator papers and are equally weighted, each being worth 33% of the final mark. Each paper has a mix of question styles varying from short single mark questions to longer unstructured questions. Paper one and paper two examine Pure Mathematical methods only, whilst paper three examines topics from two of Statistics, Mechanics or Discrete, depending on the needs of the cohort. The A level syllabus extends and deepens Mathematical understanding and requires students to demonstrate their skills and knowledge through the application of problem-solving techniques and with the use of clear, precise and appropriate mathematical language.		

KEY CONTENT

Half Term 1

Vectors and matrices:

Further Vectors – intersection of lines and planes, angles between two planes, shortest distance from a point to a plane

Matrices – determinants of 3×3 , solving simultaneous equations in 3 unknowns, factorising Eigenvectors and eigenvalues

Further algebra and graphs

Sketching modular and reciprocal graphs

Differential equations:

First order differential equations

Second order differential equations

Half Term 2

Further calculus:

Improper integrals

Inverse trigonometric functions

Trig substitution

Conics:

Composite transformations

Polar coordinates:

Area enclosed by a polar curve, tangents on a polar curve

Series and limits:

The Maclaurin series

The method of differences using partial fractions

Limits

Half Term 3Numerical methods:

Numerical Integration

Numerical Differential Equation

Complex numbers:

de Moivre's theorem

Further Mechanics:

Kinematics in two dimensions

Equilibrium and resolving

Statics and dynamics

Moments

Half Term 4Hyperbolic functions:

Further Hyperbolic Functions

Inverse Hyperbolic Functions

Further Integration:

General Integration and Limits

Reduction Formulae

Arc Length and Surface Area.

Half Term 5

Exam preparation

Half Term 6