KS5 – Year 12 – A Level Further Mathematics		
Term	**Topic Titles**	**Brief Overview**
1	Complex numbers	Understanding and manipulating numbers in the form “a+bi”, where “i” is the imaginary unit.
	Probability distributions (Year 12 maths)	Understanding and using different probability distributions.
	Discrete random variables	Analysing random variables that take on discrete values and their probability distributions.
	Series	Exploring sequences and series, including convergence and summation techniques.
	Binomial distribution (Year 12 maths)	Understanding the properties and applications of the binomial probability distribution.
	Poisson distribution	Studying the properties and applications of the Poisson probability distribution.
	Roots of polynomials	Finding and analysing the roots of polynomial equations.
	Hypothesis testing (Binomial & Poisson)	Conducting hypothesis tests using the Binomial and Poisson distributions.
	Integration (Year 12 maths)	Techniques and applications of integration learned in Year 12.
	Volumes of revolution	Calculating the volume of solids formed by rotating a region around an axis.
	Chi-squared testing	Performing chi-squared tests for goodness-of-fit and independence.
2	Matrices	Understanding and manipulating matrices, including operations and applications.
	Momentum and impulse	Analysing the principles of momentum and impulse in mechanics.
	Proof	Constructing mathematical proofs using various techniques.
	Elastic collisions in one dimension	Studying collisions where kinetic energy is conserved in one-dimensional scenarios.

	Further vectors	Extending the study of vectors to more complex problems and higher dimensions.
	Forces and friction (Year 12/13 maths)	Analysing the effects of forces and friction in mechanical systems.
	Work, energy and power	Understanding the principles and calculations of work, energy, and power in physics.
3	Integration (Year 13 maths)	Advanced techniques and applications of integration learned in Year 13.
	Geometric and negative binomial distributions	Studying the properties and applications of geometric and negative binomial distributions.
	Hypothesis testing (geometric)	Conducting hypothesis tests using the geometric distribution.