



Course Outline:

Year 12 A level Maths

	CONTENT	KEY/FUNDAMENTAL CONCEPTS	ASSESSMENT
Autumn Term	AS-Level – Trigonometry	Sine/Cosine rules Trig graphs Trig identities Solve trig equations	Baseline assessment
	AS-Level – Algebra and functions	Surds Indices Quadratic functions Simultaneous equations Inequalities Polynomial division and Factor theorem Graphs of polynomials Graph transformations	
	AS-Level – Coordinate geometry	Straight lines Circles	
	Half-term		
Autumn Term	AS-Level – Differentiation	Differentiate polynomials Use derivative to find gradient including stationary points Increasing/decreasing functions Differentiate from 1 st principles	Mixed assessment
	AS-Level - Statistics	Sampling Presenting data, incl Scatter diagrams Averages and spread of data Conditional probability Modelling with probability Binomial distribution	
	AS-Level – Exponentials and logs	Exponential and log graphs Definitions and laws of logarithms Solve equations Exponential growth and decay Curve fitting	
Christmas Holiday			
Spring Term	AS-Level – Algebra and functions AS-Level – Integration	Binomial theorem Integrate polynomials Evaluate definite integrals Integrate to find areas	Mixed assessment
	AS -Level Mechanics	Use vectors in 2D Magnitude and direction of a vector Position vectors Kinematics and travel graphs Constant acceleration formulae Circular measure, Radians	
	AS-Level – Trigonometry		
	Half-term		
Spring Term	AS -Level Mechanics	Calculus in kinematics Motion under gravity Forces and Newton's laws Connected particles	Mixed Calculus assessment
	AS-Level - Statistics	Hypothesis testing for Binomial	
Easter Holiday			

Summer Term	A-Level – Functions	Domain and range Composite and inverse functions Modulus functions and equations Composite transformations	Year 12 mock
	Half-term		
	A-Level – Sequences and series A-Level – Trigonometry A-Level – Algebra	Iterative sequences Arithmetic sequences and series Geometric sequences and series Sum to infinity Binomial expansion Reciprocal trig functions and identities Compound and double angle formulae Partial Fractions	Functions assessment



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Autumn Term	A-level - Trigonometry	Rcos(x+a) and Rsin(x+a)	Mixed assessment
	A-Level – Differentiation	Small angle approximations Differentiate trig functions Convex and concave functions Points of inflection Chain, product and quotient rules Connected rates of change Implicit differentiation	
	A-level Mechanics	Kinematics in 2 dimensions	
	Half-term		
Autumn Term	A-Level – Numerical methods	Change of sign Iterative methods Newton-Raphson Trapezium rule	Year 13 mock
	A-Level – Integration	Integration of partial fractions Integration by inspection Integration by substitution Integration by parts Integration using natural logs	
	A-Level – Proof	Analytical proof Proof by exhaustion Proof by counter example Proof by contradiction	
Christmas Holiday			
Spring Term	A-Level – Mechanics	Inclined planes Friction	Trigonometry and Differentiation assessment
	A-Level – Integration	Parametric equations Solve simple differential equations	
	A-Level – Statistics	Normal distribution	
	Half-term		
Spring Term	A-Level – Statistics	Hypothesis tests for Normal distribution and PMCC Large data set	Integration assessment
	A-Level – Mechanics	Projectiles Moments	
Easter Holiday			
Summer Term	Revision		