Curriculum Plans – Year 12 - AS Pure Mathematics 1

Please find below a detailed outline of the curriculum covered in Pure Mathematics through Year 12 in Key stage 5.

BLOCK	1	2	3	4	5	6	7
Dates	**August - September** (5 weeks)	**October - October** (4 weeks)	**November - December** (6 weeks)	**January - February** (5 weeks)	**February - March** (6 weeks)	**April - April** (4 weeks)	**May - June** (7 weeks)
Topics	**Quadratics** Factorising, completing the square and using the quadratic formula Simultaneous equations and geometrical application Substitution Inequalities Minimum and maximum values, discriminant and roots **Functions** Composite, inverse function and graphs Single and combined transformations	**Coordinate geometry** Length of a line segment Midpoint Equations of parallel and perpendicular lines Equation of a circle Intersections of circles and lines **Circular measure** Using radians, trigonometry, Pythagoras' theorem and other geometrical properties to solve problems involving length of an arc and area of a sector	**Trigonometry** Sine, cosine and tangens functions and their inverses Graphs of trigonometric functions Identities Simple and more complex equations **Series** Binomial expansion and coefficients Arithmetic and geometric progressions Infinite geometric series	**Differentiation** Derivatives and gradient function Chain rule Tangents and normals Second derivative **Further differentiation** Increasing and decreasing functions Stationary points Practical applications of extreme values and rates of change	**Integration** Reversing differentiation and calculating the constant Definite integration Area under a curve and between two curves Improper integrals Volumes of revolution	**AS Level External Examinations**	
Assessments	Chapter 1 and 2 assessment	Chapter 1 - 4 assessment	Chapter 1 - 6 assessment	Mock Examinations	Chapter 1 - 9 assessment	External examinations	
Academic Theme	Planning for Tomorrow	The World around us	Better Together	The Working World	Opportunities for Everyone	Keep it Green, Keep it Clean	