Year 12 AS Maths

Lesson Group	Specification coverage	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Pre-Test	Post-Test
A: Reinforcing Pre-requisites to Year 12	2.1 – 2.5, 2.7	Index laws	Surds and rationalising denominators	Solving quadratics	Linear and non-linear simultaneous equations	Graphs of quadratic, cubic, quartic and reciprocal functions	**A**	**A**
B: Algebraic methods	1.1, 2.6 3.1, 3.2, 4.1	Equations of straight lines and circles	Dividing polynomials and the factor theorem	Algebraic fractions	The binomial expansion	Algebraic proof	**B**	**B**
C: Trigonometric	5.1, 5.3, 5.5, 5.7	The sine rule, cosine rule and area problems	Angles in all four quadrants	Trigonometric identities	Trigonometric equations	Equations and identities	**C**	**C**
D: Calculus	7.1-7.3, 8.1 – 8.3	Differentiation from 1st principles	Gradients, tangents and normal	Stationary points	Indefinite integrals	Definite integrals	**D**	**D**
E: Exponentials and logarithms	6.1 – 6.7	Exponential modelling	Laws or logarithms	Solving equations using logarithms	Working with natural logarithms	Logarithms and non-linear data	**E**	**E**
F: Statistic	1.1, 2.3, 3.1, 4.1, 5.1, 5.2	Types of sampling	Standard deviation calculations	Mutually exclusive and independent events	The binomial distribution	Hypothesis testing	**F**	**F**
G: Mechanics	7.1, 7.2, 7.3, 7.4, 8.1- 8.4	Displacement-time and velocity-time graphs	Constant acceleration formulae	Forces and newtons laws	Motion in 2D	Variable acceleration	**G**	**G**

Year 13 A Level Maths

Lesson Group	Specification coverage	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Pre-Test	Post-Test
A: Trigonometry I	5.1, 5.3, 5.4, 5.5	Fundamentals of sec, cosec, cot	Graphs of sec, cosec, cot	Solving equations with sec, cosec, cot	Trigonometric identities	Inverse trigonometric functions	**A**	**A**
B: Trigonometry II	5.6, 5.8, 5.9	Addition formulae	The double angle formulae	Solving trigonometric equations	Simplifying asin x +/- b cos x	Modelling with trigonometric functions	**B**	**B**
C: Parametric equations	3.3, 3.4, 7.4, 7.5	Using trigonometric identities and curve sketching	Points of intersection	Modelling with parametric equations	Parametric differentiation	Parametric integration	**C**	**C**
D: Differentiation	7.1, 7.2, 7.3, 7.4, 7.5	Differentiating sin x, cos x	Chain product and quotient rules	Differentiating trigonometric function	Implicit differentiation	Second derivatives and rates of change	**D**	**D**
E: Integration I	8.2, 8.3, 8.4,	Integrating standard functions	Integrating f(ax + b)	Using trigonometric identities	Integrating in the form ab^x	Reverse chain rule	**E**	**E**
F: Integration II	8.5 – 8.8	Integration by substitution	Integration by parts	Integration by substitution	Partial fractions	Solving differential equations	**F**	**F**
G: Statistics	3.2, 3.3, 4.2, 4.3, 5.1, 5.3,	Regression and hypothesis tests	5	Normal and inverse normal distribution probabilities	The standard normal distribution	Hypothesis testing with the normal distribution	**G**	**G**
H: Mechanics	8.1 – 8.6, 9.1	Forces and friction	Projectiles	Dynamics and inclined planes	Vector method in mechanics	Statics of rigid bodies	**H**	**H**