IB1 – Year 12

Unit	Detailed topic	Spec code
Function Notation	Domain and range Inverse functions Sketching functions Technology to graph functions Composite functions Absolute functions as a concept	2.2 2.5 2.3 2.4 2..5
Linear & Quadratics	Equation of a straight line Parallel and perpendicular lines Determine key features of graphs The discriminant Solution of quadratic equations and inequalities Use of technology to solve	2.1 2.6 2.7
Transformations	Transformations of graphs Composite transformations	2.11
Rational Functions	The reciprocal function and its graph Rational functions and their graphs Equations of vertical and horizontal asymptotes.	2.8
Geometry & Trig	The distance between two points in 3D, and their midpoint Volume and surface area of 3D solids SOHCAHTOA The sine rule The cosine rule Area of a triangle Angles of elevation and depression.	3.1 3.2 3.3
Trig functions	length of an arc, area of a sector. Exact values of trigonometric ratios Trigonometric Identities Trigonometric functions Composite functions of the form Transformations. Solving trigonometric equations	3.4 3.5, 3.6 3.7 3.8

Unit	Detailed topic	Spec
Logs and exponentials	Laws of exponents Introduce the graphs of exponentials and logs (inverses) Numerical evaluation of logarithms- Converting between exp. & log form Laws of exponents with rational exponents. Laws of logarithms Change of base of a logarithm. Solving exponential equations and logarithmic equations Modelling exponential and log problems	1.5 2.9 1.7 2.10
Differentiation	Derivative interpreted as gradient function Increasing and decreasing functions Tangents and normals and their equations The chain rule, product rule and quotient rules Second derivative Local maximum and minimum points & nature Points of inflexion with zero and non-zero gradients Sketching derivatives Optimization	5.1, 5.3 5.2 5.4 5.6 5.7 5.8
Statistics	Sampling techniques Outliers Histograms Cumulative frequency Box and whisker diagrams Mean, median and mode Estimation of mean from grouped data Modal class Interquartile range, standard deviation and variance	4.1 4.2 4.3
Correlation regression	Scatter diagrams Linear correlation Pearson's product-moment correlation coefficient Equation of the regression line (including x on y)	4.4 4.10

IB2 – Year 13

Unit	Detailed topic	Spec code
Probability	Sample spaces The complementary events Expected number of occurrences Venn diagrams, tree diagrams, sample space diagrams and tables Combined events Mutually exclusive events Conditional probability Independent events	4.5 4.6 4.11
Probability Distributions	Discrete random variables and their probability distributions Expected value for discrete data Binomial distribution The normal distribution	4.7 4.8 4.9,4.12
Integration	Indefinite and definite integrals Definite integrals using technology Area of a region enclosed by a curve and axis Areas between curves (polynomials) Integrals of trig functions, ln x and exponentials Integration by substitution Kinematics	5.5 5.11 5.10 5.9
Number	Arithmetic sequences and series Geometric sequences and series Sum of infinite geometric sequences Sigma notation Financial applications Deductive proof The binomial theorem	1.2 1.3 1.8 1.4 1.6 1.9