Topic	Subtopics	Number of weeks	Spec code	Textbook H&H
	Domain and range		2.2	6A
	Inverse functions		2.3	4,15 (core)
	Composite functions		2.5	
	Odd and even functions		2.10	
	Sketching functions		2.14HL	
Function Notation	Technology to graph functions	1		
	Dilation, Reflection and translation of graphs		2.11	16 (core)
	Composite transformations af(bx+c)+d			
Transformation		1		
			2.4	14 (core)
	Standard, vertex and intercept form (domain, range, axis of symmetry, vertex and roots)		2.6	
	Graphing quadratic functions		2.7	
	Quadratic formula and its graphical interpretation			
	Solving quadratic equations and quadratic inequalities			
	Problem solving with quadratics			
Quadratic Functions	Optimization with quadratics	1		
	Rational functions of the form f(x)/g(x) where f(x) and g(x) are linear, or degree of		2.8	1,6D
	f(x)=degree of g(x) or degree of f(x)<degree of g(x) (domain, range, centre of symmetry, horizontal, vertical and oblique asymptotes)		2.13HL	
Rational Functions	Graphing rational functions	1		
	Sketching the graph			
Square Root Functions	Determine domain and range			
	Sketching the graph		2.15HL	6C
	Domain and range		2.16HL	
Absolute Value Functions	Solving absolute value equations and inequalities			
	Transformation of the form 1/f(x)			6B
	Transformation of the form $(f(x))^2$			
Further Transformations	Transformation of the form |f(x)| and f(|x|)	1		
	Operating on polynomials (long division and synthetic division)		1.11HL	5, 6E
	Factor Theorem		2.12HL	
	Remainder Theorem			
	Fundamental Theorem of Algebra			
	Conjugate Root Theorem (complex numbers introduced briefly first)			
	Vieta's formulas (sum and product of roots)			
	Solving polynomial equations and inequations			
Polynomials	Graph a cubic and a quartic functions	3		
	Arithmetic sequences and series		1.2	5 (Core)
	Geometric sequences and series (finite and infinite)		1.3	
	Sigma notation		1.4	
	Problem solving using sequences		1.8	
Sequences and Series	Financial Maths using compound angle formula and GDC	2		
	Factorial notation		1.9	8A&B
	nCr binomial coefficient			
	Binomial Theorem (with and integer exponent)			
Binomial Expansion	Product of polynomials using Binomial expansion	1		
	Direct proof		1.6	9, 10
Proofs	Proof by Induction	1	1.15HL	
			3.4	8,17 (core)
	Angle conversion (degrees and radians)		3.5	1
	Arc length and area of a sector		3.6	
	Unit circle (associated arcs, proof of symmetry identities and even/odd identities)		3.7	
	Solving trigonometric equations		3.8	
	Reciprocal identities, tangent and cotangent identities, Pythagorean identities,		3.9HL	
	compound angle identities and double angle identities		3.10HL	
	Proving trigonometric identities		3.11HL	
	Graphing trigonometric functions and their transformations (amplitude, midline, period, phase shift)			
	Write the equations of a trigonometric function given its graph in the form asin(bx+c)+d, acos(bx+c)+d, atan(bx+c)+d			
	Graphing inverse trigonometric functions (domain)			
	Compose trigonometric and inverse trigonometric functions			
Trigonometry		6		
	Distance between two points in space and the midpoint of two points in space		3.1	6,7,9,10 (core)
	Volume and surface area of 3D shapes (cuboid, sphere, prism, pyramid, cylinder and cone)		3.2	
			3.3	
	sine rule, cosine rule, area of a triangle			
	Angle between a line and a plane			
3D Geometry	Equation of a line using the angle between the line and the positive x-axis	1		
	Limit laws and finding limits using algebraic manipulations		5.1	15,16,17,18,19
	Rates of change (average and instantaneous)		5.2	
	Differentiating from first principles and from basic differentiation rules		5.3	
	Continuity and differentiability		5.4	
	Chain rule, quotient rule and product rule for differentiation		5.6	
	Tangent and normal lines		5.7	
	Trigonometric functions differentiation		5.8	
	Stationary points, point of inflection, first and second derivative tests		5.12HL	
	Sketch graphs of f, f' and f'' given the curve of one of those functions		5.13HL	
	Implicit differentiation		5.14HL	
	Inverse trigonometric functions differentiation		5.15HL	
	Optimization			
	Related rates			
	L'Hopital's Rule for finding limits			
Calculus	Higher order derivatives	7		
	Exponential and logarithmic functions		1.5	2,3
	Algebra of Logarithms		1.7	3 (core)
	Solving exponential and logarithmic equations		2.9	
Exponential and Logarithms	Exponential growth and decay problem solving	2		
	Cartesian form:		1.12HL	4, 14
	- operate on complex numbers (add, subtract, multiply and divide)		1.13HL	
	- find conjugates		1.14HL	
	- locate on an argand plane			
	Polar form:			
	- convert between cartesian and polar form			
	- operate on numbers in polar form			
	Powers of complex numbers using de Moivre's Theorem			
	Nth roots of unity			
	Euler form:			
Complex Numbers	- evaluate numbers in Euler form	3		
	Antiderivatives (basic integration formulas)		5.5	20,21,22,23,24,
	Integration by substitution		5.9	25
	Integration by parts		5.10	
	Integration using trigonometric substitutions		5.11	
	Integration using partial fractions		5.16HL	
	Approximating the area under a curve		5.17HL	
	The Fundamental Theorem of Calculus		5.18HL	
	Definite integrals involving substitution		5.19HL	
	Area above a curve			
	Area between two functions			
	Volume using the disk method, washer method and shell method			
	Area under the rate curve			
	Kinematics			
	Differential equations (separable, homogeneous, integrating factor method, Euler's method)			
	Logistic growth			
	Maclaurin series			
	Binomial expansion with a rational exponent			
Integration	Maclaurin series developed from a differential equation	5		
	Geometric operations with vectors		1.16HL	11,12,13
	Zero vector		3.12HL	
	Geometric scalar multiplication		3.13HL	
	Vectors in a plane		3.14HL	
	Magnitude of a vector		3.15HL	
	Operations with plane vectors		3.16HL	
	Vectors in a scale		3.17HL	
	Vector algebra		3.18HL	
	Parallelism			
	Unit vectors			
	Collinear points			
	Scalar product of two vectors			
	Vector product of two vectors			
	Vector equations of a line in 2 and 3 dimensions (equation and relative position)			
	Shortest distance between a point and a line and two lines			
	Linear algebra (solving a system of equations using row reduction to a row echelon form)			
	Equations of a plane in 3D (vector equation, parametric equations and cartesian equations)			
	Relative position of planes			
	Distance between a point and a plane, a line and a plane and two planes			
Vectors	Constant velocity problems using vectors	4		
	Product and sum principles		1.10 HL	7
	Factorial notation			
	Permutations			
	Combinations			
Counting Principles		1		
	Venn Diagrams		4.1	26, 27, 28
	Tree Diagrams		4.2	2,11,12,13
	Conditional probability and independent events		4.3	(core)
	Bayes Theorem		4.4	
	Sampling and data collection		4.5	
	Frequency tables		4.6	
	Measures of data spread		4.7	
	Box and whisker diagrams		4.8	
	Cumulative frequency graphs		4.9	
	Variance and standard variation		4.10	
	Pearson's product moment correlation coefficient		4.11	
	Line of best fit by eye		4.12	
	Least square regression line of y against x and x against y		4.13HL	
	Discrete random variables		4.14HL	
Statistics and Probability	Continuous random variables	5		