



TERM/WEEK	TOPIC	OBJECTIVES AND DISCUSSION POINTS incl. Links to IB Syllabus[]
<p>TERM 1 Week 1 to 3</p>	<p>[Strand: Probability and Statistics] Probability</p>	<ul style="list-style-type: none"> • Sample space; event A; complementary event A'. • Probability of an event. • Probability of a complementary event. • Expected value. • Probability of combined events, mutually exclusive events, independent events. • Use of tree diagrams, Venn diagrams, sample space diagrams and tables of outcomes. • Probability using “with replacement” and “without replacement”. • Conditional probability.
<p>Term 1 Week 4 to 6</p>	<p>[Strand: Probability and Statistics] Descriptive Statistics</p>	<ul style="list-style-type: none"> • Classification of data as discrete or continuous. • Simple discrete data; frequency tables. • Grouped discrete or continuous data: frequency tables; mid-interval values; upper and lower boundaries. • Frequency histograms. • Cumulative frequency tables for grouped discrete data and for grouped continuous data; cumulative frequency curves, median and quartiles. • Box-and-whisker diagram. • Outliers • Measures of central tendency. • For simple discrete data: mean; median; mode. • For grouped discrete and continuous data: estimate of a mean, modal class. • Measures of dispersion: range, interquartile range, standard deviation.
<p>Term 1 Week 7 to 10</p>	<p>[Strand 2: Geometry and Trigonometry] Vectors (10 hours)</p>	<ul style="list-style-type: none"> • Vectors as displacements in the plane and in three dimensions. • Components of a vector; column representation; $v = v_1i + v_2j$.



		<ul style="list-style-type: none"> Algebraic and geometric approaches to the following: the sum and difference of two vectors; the zero vector, the vector $-v$; multiplication by a scalar, $k\mathbf{v}$, parallel vectors; magnitude of a vector \mathbf{v}; unit vectors; base vectors; i and j; position vectors $\vec{OA} = \mathbf{a}$; $\vec{AB} = \vec{OB} - \vec{OA} = \mathbf{b} - \mathbf{a}$.
<p>TERM 2</p> <p>Week 1 to 3</p>	<p>Internal Assessment</p>	<p>An individual exploration. A piece of written work that involves investigating an area of mathematics, modelling, investigation and application of mathematics etc. Grading will be based on marking criteria for SL Maths IA.</p>
<p>Term 2</p> <p>Week 4 to 6</p>	<p>[Strand: Number and Algebra]</p> <p>Sequences and series (15 Hours)</p>	<ul style="list-style-type: none"> Arithmetic sequences and series, and their applications. Use of the formulae for the nth term and the sum of the first n terms of the sequence. Geometric sequences and series. Use of the formulae for the nth term and the sum of the first n terms of the sequence. Sum of a finite geometric series. <p>Sum of an infinite geometric series.</p>
<p>Term 2</p> <p>Week 7 to 10</p>	<p>[Strand 2: Geometry and Trigonometry]</p> <p>Deductive Geometry (20 Hours)</p>	<ul style="list-style-type: none"> Circle theorems: Angle in a semi-circle, Chords of a circle, radius-tangent, tangents from an external point, some converses Further circle theorems: Angle at the centre, angles subtended by the same arc, angle between a tangent and a chord



		<ul style="list-style-type: none">• Geometric proof• Cyclic quadrilaterals• Opposite angles of a cyclic quadrilateral theorem• Tests for cyclic quadrilaterals
TERM 3 Week 1 to 5	[Strand: Calculus] Introduction to Calculus I (25 Hours)	<ul style="list-style-type: none">• Estimating gradients of tangents to curves• Gradients Using Quadratic Theory• Gradients using Limit Theory• The Derivative Function• Rules of differentiation• Optimisation
Term 3 Week 6 to 10	Introduction to Calculus II (25 Hours)	<ul style="list-style-type: none">• Areas Under Curves• Integration• Rules of Integration• The Definite Integral
TERM 4 Week 1 to 2	Revision for EOY Exam	
Term 4 Week 3 to 6	EOY Exam & Checking of Scripts	