

## Year 3IP Core Mathematics Course Outline

	Topics
<b>Term 1</b>	
<b>1</b>	<b>Simultaneous Equations</b>
1.1	Linear Equations in 2 unknowns
1.2	Linear and non-linear equations in 2 unknowns
<b>2</b>	<b>Solutions to Quadratic Equations</b>
2.1	Completing the Square
2.2	Quadratic Formula
2.3	Graphs of Quadratic Equations
2.4	Sketching of Quadratic Curves
<b>3</b>	<b>Indices, Surds and Logarithm</b>
3.1	Laws of Indices
3.2	Surds
3.3	Exponential Equations
<b>Term 2</b>	
<b>4</b>	<b>Solutions of a Triangle</b>
4.1	Basic Trig Ratios [acute and obtuse angles]
4.2	Solve equations of the form $\sin x = k$ , $\cos x = k$ and $\tan x = k$ where $x \in [0^\circ, 180^\circ]$ (exclude angles in radians)
4.3	Sine Rule
4.4	Cosine Rule
4.5	Area of a Triangle
4.6	Bearings
4.7	3-D Problems
<b>Term 3</b>	
<b>5</b>	<b>Linear Inequalities</b>
5.1	Properties of Linear Inequalities
5.2	Solve Linear Inequalities in One Variable
5.3	Word Problems involving Linear Inequalities
<b>6</b>	<b>Theory of Quadratic Equations, Functions and Inequalities</b>
6.1	Sum and Product of Roots
6.2	Quadratic Inequalities
6.3	Discriminant and Nature of Roots
<b>7</b>	<b>Co-ordinate Geometry</b>
7.1	Mid-point
7.2	Distance between Two Points
7.3	Gradient of a Straight Line
7.4	Equation of a Straight Line
7.5	Collinear Points, Parallel Lines and Perpendicular Lines
7.6	Perpendicular Bisectors
7.7	Area of rectilinear figures
<b>8</b>	<b>Graphs of Functions</b>
8.1	Cubic Functions
8.2	Reciprocal Functions
8.3	Exponential Functions
8.4	More Graphical solutions

<b>Term 4</b>	
<b>9</b>	<b>Mensuration</b>
9.1	Pyramids
9.2	Cones
9.3	Spheres