

Year 3IP Core Mathematics Course Outline

	Topics
Term 1	
1	Simultaneous Equations
1.1	Linear Equations in 2 unknowns
1.2	Linear and non-linear equations in 2 unknowns
2	Solutions to Quadratic Equations
2.1	Completing the Square
2.2	Quadratic Formula
2.3	Graphs of Quadratic Equations
2.4	Sketching of Quadratic Curves
3	Indices, Surds and Logarithm
3.1	Laws of Indices
3.2	Surds
3.3	Exponential Equations
3.4	Definition of Logarithms
3.5	Common and Natural Logarithms
3.6	Laws of Logarithms
3.7	Logarithmic Equations
3.8	Solving Equations of the form $ax = b$
Term 2	
4	Solutions of a Triangle
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
Term 3	
5	Linear Inequalities
5.1	Properties of Linear Inequalities
5.2	Solve Linear Inequalities in One Variable
5.3	Word Problems involving Linear Inequalities
6	Theory of Quadratic Equations, Functions and Inequalities
6.1	Sum and Product of Roots
6.2	Quadratic Inequalities
6.3	Discriminant and Nature of Roots
7	Co-ordinate Geometry
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

8	Graphs of Functions
8.1	Cubic Functions
8.2	Reciprocal Functions
8.3	Exponential Functions
8.4	More Graphical solutions
Term 4	
9	Mensuration
9.1	Pyramids
9.2	Cones
9.3	Spheres