Year 3 Express Additional Mathematics Course Outline

	Topics
Term 1	
0	**Common Conceptual Mistakes in Algebra**
0.1	Common Conceptual Mistakes in Algebra
1	**Simultaneous Equations**
1.1	Linear and Non-Linear Equation in 2 unknowns
1.2	Simultaneous Equations in Word Problems
2	**Quadratic Expressions and Equations**
2.1	Discriminant and Nature of Roots
3	**Coordinate Geometry**
3.1	Midpoint, Distance, Gradient, Equation of a Straight Line
3.2	Collinear Points, Parallel Lines and Perpendicular Lines
3.3	Circles
Term 2	
4	**Polynomials and Partial Fractions**
4.1	Polynomial Identities, Dividing Polynomials
4.2	Remainder and Factor Theorem
4.3	Solving Cubic equations
4.4	Partial Fractions
5	**Surds and Exponential Equations**
5.1	Surds
5.2	Indices and Exponential Equations
5.3	Sketching Exponential Functions
6	**Logarithms**
6.1	Definition of Logarithms
6.2	Common and Natural Log
6.3	Laws of Logarithms
6.4	Graphs of Logarithmic Functions
6.5	Logarithmic Equations
6.6	Solving Equations of the form $a^x = b$
6.7	Applications of Logarithmic Functions
Term 3	
7	**Linear Law**
7.1	Finding unknown constants from given linear graphs
7.2	Application of Linear Law
8	**Trigonometric Functions and Graphs**
8.1	Trigonometric Functions of Angles
8.2	Graphs of Trigonometric Functions
9	**Trigonometric Identities and Equations**
9.1	Simple Identities
9.2	Solving Trigonometric Equations

10	**Binomial Theorem**
10.1	Notation
10.2	Expansion
10.3	General Terms