AS Level Core 2

	What You Need To Know			
1. Algebra and Functions	• To understand and use the laws of indices • Knowledge of the effect of simple transformations on the graph of $y=f(x)$ as represented by $y=af(x)$, $y=f(x)+a$, $y=f(x+a)$, $y=f(ax)$.			
2. Sequences and Series	• Sequences, including those given by a formula for the nth term. Including using the Σ notation. • Sequences generated by a simple relation of the form $x_{n+1} = f(x_n)$ • Arithmetic series, including the formula for the sum of the first n natural numbers. • The sum of a finite geometric series. • The sum to infinity of a convergent $(-1 < r < 1)$ geometric series. • The binomial expansion of $(1 + x)n$ for positive integer n.			
3. Trigonometry	• The sine and cosine rules. • The area of a triangle in the • form $\frac{1}{2}ab\sin C$ • Degree and radian measure. • Arc length, area of a sector of a circle. • Sine, cosine and tangent functions. Their graphs, symmetries and periodicity. • Knowledge and use of $\tan\theta = \frac{\sin\theta}{\cos\theta}$ and $sin^2\theta + cos^2\theta = 1$ • Solution of simple trigonometric equations in a given interval of degrees or radians.			
4. Exponentials and Logarithms	• $y = a^x$ and its graph. • Logarithms and the laws of logarithms. • The solution of equations of the form $a^x = b$			
5. Differentiation	• Differentiation of x^n, where n is a rational number, and related sums and differences.			
6. Integration	• Integration of x^n, $n \neq -1$, and related sums and differences. • Approximation of the area under a curve using the trapezium rule.			