SING YIN SECONDARY SCHOOL
Syllabus for F.4 Mathematics (2016-2017)
Extended Part – Module 1

Textbook :   New Progress in Senior Mathematics – Module 1 Book 1
              S. N. Suen & K.T. Hung   HK Educational Publishing Co.

Students are expected to develop the following attitudes:
- to love logical thinking
- to accept careful work as important
- to accept challenging work.

Chapter	Topics	Approx. No. of Period	Objectives
1	Binomial Theorem	4	- To recognise the expansion of $(a + b)^n$, where n is a positive integer
			- To expand a trinomial.
2	Exponential and Logarithmic Functions	9	- To recognise the definition of the number e and the exponential series $e^x = 1 + x + \dfrac{x^2}{2!} + \dfrac{x^3}{3!} + ...$ - To recognise exponential functions and logarithmic functions. - To use exponential functions and logarithmic functions to solve problems - To transform $y = kx^n$ and $y = ka^x$ to linear relations, where a, n and k are real numbers, $a > 0$ and $a \neq 1$
3	Limits and Derivatives	8	- To recognise the intuitive concept of the limit of a function - To find the limits of algebraic functions, exponential functions and logarithmic functions - To recognise the concept of the derivative of a function from first principles - To recognise the slope of the tangent of the curve $y = f(x)$ at a point $x = x_0$
4	Differentiation	16	- To understand the addition rule, product rule, quotient rule and chain rule of differentiation - To find the derivatives of algebraic functions, exponential functions and logarithmic functions - To recognise the concept of the second derivative of a function - To find the second derivative of an explicit function
5	Application of Differentiation (to be continued)	4	- To use differentiation to solve problems involving tangents

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Signature of Teacher In Charge : _____

Checked by : _____