

Wah Yan College Kowloon
F.5 Mathematics M2 Scheme of Work (2017-2018)

Textbook	1. NSS Mathematics in Action Extended Part: Module 2 Volume 1
Other Resources	

◆ Repertoire of Self-directed Learning Skills:

1. reading to learn, 2. notes-taking, 3. looking up words in the dictionary, 4. pre-lesson preparation, 5. group discussion, 6. group presentation, 7. initiative to ask questions, 8. setting learning objectives and doing reflection, 9. eLearning platform with instant feedback, 10. flipped classroom, 11. peer assessment, 12. searching for information on the internet, 13. project learning, 14. training of higher-order thinking skills, etc.

SL: Scheduled number of lessons

AL: Actual number of lessons

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills◆	Values[#]	Basic Law Education
First Term (3/9/2017-30/12/2017, Weeks 1-17)	1-7	Chapter 9 Differentiation (II)	9.1 Differentiation of Trigonometric Functions Learn theorems to differentiate trigonometric functions. Teachers may let students prove the theorems from first principles.	6	Example 9.1, Teaching Example 9.1, Example 9.2, Teaching Example 9.2, Example 9.3, Teaching Example 9.3, Teaching Example 9.3 (Extra), Example 9.4, Teaching Example 9.4, Example 9.5, Teaching Example 9.5, Example 9.6, Teaching Example 9.6,	Exercise 9A (p. 9.9) Level 1: 1 – 30 Level 2: 31 – 53 Rev. Ex. 9 (p. 9.33) Level 1: 1 – 10, 19 – 20 Level 2: 31 – 36, 45, 54 – 56, 63 – 64			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
					Teaching Example 9.6 (Extra) 5-Minute Lecture: Differentiation of Trigonometric Functions				
			9.2 Differentiation of Exponential Functions Learn theorems to differentiate exponential functions. Teachers may let students find the derivative of e^x from first principles.	7	Example 9.7, Teaching Example 9.7, Example 9.8, Teaching Example 9.8, Example 9.9, Teaching Example 9.9, Teaching Example 9.9 (Extra), Example 9.10, Teaching Example 9.10, Example 9.11, Teaching Example 9.11, Example 9.12, Teaching Example 9.12, Example 9.13, Teaching Example 9.13 5-Minute Lecture: Differentiation of Exponential Functions	Exercise 9B (p. 9.16) Level 1: 1 – 19 Level 2: 20 – 37 Rev. Ex. 9 (p. 9.33) Level 1: 11 – 15, 21 Level 2: 37 – 38, 42, 46, 48			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			9.3 Differentiation of Logarithmic Functions • Learn theorems to differentiate logarithmic functions. • Find $\frac{dy}{dx}$ by the method of logarithmic differentiation. Teachers may let students find the derivative of $\ln x$ from first principles.	7	Example 9.14, Teaching Example 9.14, Example 9.15, Teaching Example 9.15, Example 9.16, Teaching Example 9.16, Example 9.17, Teaching Example 9.17, Example 9.18, Teaching Example 9.18, Example 9.19, Teaching Example 9.19, Example 9.20, Teaching Example 9.20, Example 9.21, Teaching Example 9.21, Teaching Example 9.21 (Extra) 5-Minute Lecture: Differentiation of Logarithmic Functions	Exercise 9C (p. 9.25) Level 1: 1 – 26 Level 2: 27 – 49 Rev. Ex. 9 (p. 9.33) Level 1: 16 – 18, 22 Level 2: 39 – 41, 43 – 44, 47, 49 – 53, 57, 65			
			9.4 Second Derivatives • Recognise the concept of the	4	Example 9.22, Teaching Example 9.22, Example 9.23, Teaching Example 9.23,	Exercise 9D (p. 9.30) Level 1: 1 – 16 Level 2: 17 – 37			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			<p>second derivative of a function.</p> <ul style="list-style-type: none"> • Find the second derivatives of explicit functions. • Third and higher order derivatives are not required. • Students are not required to find the second derivatives of inverse functions. 		<p>Example 9.24, Teaching Example 9.24, Example 9.25, Teaching Example 9.25</p> <p>Discussion: 9.1</p> <p>5-Minute Lecture: Second Derivatives</p>	<p>Rev. Ex. 9 (p. 9.33) Level 1: 23 – 30 Level 2: 58 – 62, 66</p>			
	7-13	Chapter 10 Applications of Differentiation	<p>10.1 Tangents and Normals to Curves • Use differentiation to find the equations of tangents to curves.</p> <ul style="list-style-type: none"> • Use differentiation to find the equations of normals to curves. <p>Students should have the pre-requisite knowledge of point-slope form of a straight line.</p>	3	<p>Example 10.1, Teaching Example 10.1, Example 10.2, Teaching Example 10.2, Example 10.3, Teaching Example 10.3, Example 10.4, Teaching Example 10.4</p> <p>5-Minute Lecture: Finding Tangents and Normals to Curves</p>	<p>Exercise 10A (p. 10.7) Level 1: 1 – 16 Level 2: 17 – 30 Rev. Ex. 10 (p. 10.75) Level 1: 1 – 5 Level 2: 24 – 26</p>			
			<p>10.2 Local Extrema and First</p>	2	<p>Example 10.5, Teaching Example 10.5,</p>	<p>Exercise 10B (p. 10.17)</p>			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			Derivative Test <ul style="list-style-type: none"> • Understand the concept of increasing function and decreasing function. • Learn the concept of local extremum. • Learn and apply the first derivative test to find local extrema. Students should have the pre-requisite knowledge of the direction of a straight line with positive slope or negative slope.		Example 10.6, Teaching Example 10.6, Teaching Example 10.6 (Extra), Example 10.7, Teaching Example 10.7 5-Minute Lecture: Increasing and Decreasing Functions 5-Minute Lecture: Local Extrema 5-Minute Lecture: First Derivative Test Teaching Tool: Derived function of $f(x)$	Level 1: 1 – 16 Level 2: 17 – 28 Rev. Ex. 10 (p. 10.75) Level 1: 6 – 9 Level 2: 28 – 29			
			10.3 Concavity and Second Derivative Test <ul style="list-style-type: none"> • Understand the concept of concavity of a curve. • Learn and apply the second derivative test to find local 	3	Example 10.8, Teaching Example 10.8, Example 10.9, Teaching Example 10.9, Example 10.10, Teaching Example 10.10, Example 10.11,	Exercise 10C (p. 10.25) Level 1: 1 – 15 Level 2: 16 – 25 Rev. Ex. 10 (p. 10.75) Level 1: 10 – 11 Level 2: 27			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			<p>extrema.</p> <p>Students should understand the cases that the second derivative test is not applicable in finding local extrema.</p>		<p>Teaching Example 10.11</p> <p>5-Minute Lecture: Concavity of a Function</p> <p>5-Minute Lecture: Second Derivative Test</p> <p>Teaching Tool: Concavity of Functions</p>				
			<p>10.4 Curve Sketching</p> <ul style="list-style-type: none"> • Learn the concept of points of inflexion. • Learn the concept of asymptotes. • Learn how to sketch the graphs of polynomial functions and rational functions. <p>Some software (e.g. GeoGebra) can help students check whether they sketch the graphs of functions properly. Teachers may introduce the</p>	6	<p>Example 10.12, Teaching Example 10.12, Example 10.13, Teaching Example 10.13, Example 10.14, Teaching Example 10.14, Example 10.15, Teaching Example 10.15, Example 10.16, Teaching Example 10.16, Example 10.17, Teaching Example</p>	<p>Exercise 10D (p. 10.41)</p> <p>Level 1: 1 – 12</p> <p>Level 2: 13 – 18</p> <p>Rev. Ex. 10 (p. 10.75)</p> <p>Level 1: 12 – 13</p> <p>Level 2: 30 – 32, 38, 42</p>			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			software to students.		10.17, Example 10.18, Teaching Example 10.18, Example 10.19, Teaching Example 10.19, Teaching Example 10.19 (Extra) Discussion : 10.1 5-Minute Lecture: Points of Inflexion 5-Minute Lecture: Asymptotes				
			10.5 Global Extrema and Optimization Problems • Learn the concept of global extrema. • Learn the method of using differentiation to solve optimization problems.	4	Example 10.20, Teaching Example 10.20, Example 10.21, Teaching Example 10.21, Example 10.22, Teaching Example 10.22, Teaching Example	Exercise 10E (p. 10.52) Level 1: 1 – 18 Level 2: 19 – 32 Rev. Ex. 10 (p. 10.75) Level 1: 14 – 15, 17 – 18 Level 2: 35, 37, 41			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
					10.22 (Extra), Example 10.23, Teaching Example 10.23, Example 10.24, Teaching Example 10.24, Teaching Example 10.24 (Extra) 5-Minute Lecture: Global Extrema				
Second Term (31/12/2017-18/7/2018, Weeks 18-46)	18-19		10.6 Rates of Change <ul style="list-style-type: none"> • Understand the concepts of instantaneous velocity and acceleration. • Use differentiation to find the instantaneous velocity and acceleration. • Use differentiation to find the rate of change of a quantity. Students should distinguish	3	Example 10.25, Teaching Example 10.25, Example 10.26, Teaching Example 10.26, Teaching Example 10.26 (Extra), Example 10.27, Teaching Example 10.27, Example 10.28, Teaching Example 10.28,	Exercise 10F (p. 10.66) Level 1: 1 – 17 Level 2: 18 – 26 Rev. Ex. 10 (p. 10.75) Level 1: 16, 19 – 23 Level 2: 33 – 34, 36, 39, 40			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			the concepts of the average rate of change and the instantaneous rate of change.		Teaching Example 10.28 (Extra), Example 10.29, Teaching Example 10.29 5-Minute Lecture: Velocity and Acceleration 5-Minute Lecture: Rate of Change of a Quantity				
	19-23	Chapter 11 Indefinite Integration (I)	11.1 Concept of Indefinite Integration To recognise the concept of indefinite integration.	1	Exploration: 11.1 5-Minute Lecture: Concept of Indefinite Integration				
			11.2 Basic Integration Formulas for Elementary Functions • To learn how to use the integration formulas of algebraic, exponential functions to find integrals.	3	Example 11.1, Teaching Example 11.1, Example 11.2, Teaching Example 11.2, Example 11.3, Teaching Example 11.3, Example 11.4, Teaching Example 11.4,	Exercise 11A (p. 11.12) Level 1: 1 – 34 Level 2: 35 – 47 Rev. Ex. 11 (p. 11.45) Level 1: 1 – 16			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			<ul style="list-style-type: none"> To understand the basic properties of indefinite integrals. <p>Teachers should help students understand the basic integration formulas and their proofs.</p>		<p>Example 11.5, Teaching Example 11.5, Example 11.6, Teaching Example 11.6, Example 11.7, Teaching Example 11.7</p>				
			<p>11.3 Integration by Substitution</p> <p>To learn how to use integration by substitution to find indefinite integrals.</p> <p>For the integrand in the form $f(g(x))g'(x)$, teachers should explain why</p> $\int f(g(x))g'(x)dx$ <p>can be written as</p> $\int f(g(x))d[g(x)]$ <p>without introducing the substitution $u = g(x)$.</p>	4	<p>Example 11.8, Teaching Example 11.8, Example 11.9, Teaching Example 11.9, Example 11.10, Teaching Example 11.10, Example 11.11, Teaching Example 11.11, Example 11.12, Teaching Example 11.12, Example 11.13, Teaching Example 11.13, Example 11.14,</p>	<p>Exercise 11B (p. 11.23) Level 1: 1 – 24 Level 2: 25 – 45 Rev. Ex. 11 (p. 11.45) Level 1: 17 – 22 Level 2: 26 – 42</p>			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
					Teaching Example 11.14 Discussion: 11.1 5-Minute Lecture: Integration by Substitution				
			11.4 Solving Problems by Indefinite Integration <ul style="list-style-type: none"> • To learn how to use indefinite integration to solve geometrical problems. • To learn how to apply indefinite integration to physics and other real-life or mathematical contexts. For daily-life applications, teachers may also explain the actual meanings of the integration constants.	6	Example 11.15, Teaching Example 11.15, Example 11.16, Teaching Example 11.16, Example 11.17, Teaching Example 11.17, Teaching Example 11.17 (Extra), Example 11.18, Teaching Example 11.18, Example 11.19, Teaching Example 11.19, Example 11.20,	Exercise 11C (p. 11.31) Level 1: 1 – 11 Level 2: 12 – 22 Rev. Ex. 11 (p. 11.45) Level 1: 23 Level 2: 43 – 45, 50 – 51 Exercise 11D (p. 11.39) Level 1: 1 – 11 Level 2: 12 – 18 Rev. Ex. 11 (p. 11.45) Level 1: 24 – 25 Level 2: 46 – 49			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
					Teaching Example 11.20, Example 11.21, Teaching Example 11.21, Teaching Example 11.21 (Extra) 5-Minute Lecture: Geometrical Applications of Indefinite Integration				
	26-32	Chapter 12 Indefinite Integration (II)	12.1 Integration Formulas for Trigonometric Functions Learn how to use basic integration formulas to find the indefinite integrals of trigonometric functions.	2	Example 12.1, Teaching Example 12.1, Example 12.2, Teaching Example 12.2, Example 12.3, Teaching Example 12.3, Example 12.4, Teaching Example 12.4, Teaching Example 12.4 (Extra)	Exercise 12A (p. 12.6) Level 1: 1 – 15 Level 2: 16 – 25 Rev. Ex. 12 (p. 12.34) Level 1: 1 – 4, 9, 11 – 12, 24 Level 2: 32, 34, 39, 51, 53			
			12.2 Integration of Trigonometric	5	Example 12.5, Teaching Example 12.5,	Exercise 12B (p. 12.16)			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			<p>Functions by Substitution</p> <ul style="list-style-type: none"> • Learn how to find integrals involving trigonometric functions by simple substitution. • Learn how to find integrals using product to sum formulas. • Learn how to find integrals in the form $\sin^m x \cos^n x$. • Learn how to find integrals in the form $\tan^m x \sec^n x$ or $\cot^m x \operatorname{cosec}^n x$. • Ask students to prove new formulas introduced in this section. • Help students revise product to sum formulas. 		<p>Example 12.6, Teaching Example 12.6, Teaching Example 12.6 (Extra), Example 12.7, Teaching Example 12.7, Example 12.8, Teaching Example 12.8, Example 12.9, Teaching Example 12.9, Example 12.10, Teaching Example 12.10, Example 12.11, Teaching Example 12.11, Example 12.12, Teaching Example 12.12, Example 12.13, Teaching Example 12.13, Teaching Example 12.13 (Extra)</p>	<p>Level 1: 1 – 30 Level 2: 31 – 58 Rev. Ex. 12 (p. 12.34) Level 1: 5, 7, 10, 13 – 23 Level 2: 31, 33, 35 – 38, 54</p>			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills♦	Values#	Basic Law Education
			<p>12.3</p> <p>More about Integration by Substitution</p> <ul style="list-style-type: none"> • Understand the concept of inverse trigonometric functions and their principal values. • Learn how to find integrals involving $\sqrt{a^2 - x^2}$, $\sqrt{a^2 + x^2}$ and $\sqrt{x^2 - a^2}$. <p>Students should understand why we substitute $x = a \sin \theta$, $a \tan \theta$ and $a \sec \theta$ for integrals involving $\sqrt{a^2 - x^2}$, $\sqrt{a^2 + x^2}$ and $\sqrt{x^2 - a^2}$ respectively.</p>	2.5	<p>Example 12.14, Teaching Example 12.14, Teaching Example 12.14 (Extra), Example 12.15, Teaching Example 12.15, Example 12.16, Teaching Example 12.16, Example 12.17, Teaching Example 12.17</p> <p>5-Minute Lecture: More about Integration by Substitution</p>	<p>Exercise 12C (p. 12.25)</p> <p>Level 1: 1 – 11</p> <p>Level 2: 12 – 32</p> <p>Rev. Ex. 12 (p. 12.34)</p> <p>Level 1: 25 – 28</p> <p>Level 2: 40 – 43, 52</p>			
			<p>12.4</p> <p>Integration by Parts</p> <p>Learn how to find indefinite integrals using integration by parts.</p>	3	<p>Example 12.18, Teaching Example 12.18, Example 12.19, Teaching Example 12.19, Example 12.20,</p>	<p>Exercise 12D (p. 12.31)</p> <p>Level 1: 1 – 14</p> <p>Level 2: 15 – 23</p> <p>Rev. Ex. 12 (p. 12.34)</p> <p>Level 1: 6, 8, 29 –</p>			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			Teachers should consider going through all examples in this section as the examples show different techniques of using integration by parts.		Teaching Example 12.20, Teaching Example 12.20 (Extra), Example 12.21, Teaching Example 12.21, Teaching Example 12.21 (Extra), Example 12.22, Teaching Example 12.22 Discussion: 12.1 5-Minute Lecture: Integration by Parts	30 Level 2: 44 – 50			
	32-36	Chapter 13 Definite Integration	13.1 Definite Integration • To recognise the concept of definite integration. • To understand the properties of definite integrals. • To recognise the Fundamental Theorem of	5	Example 13.1, Teaching Example 13.1, Example 13.2, Teaching Example 13.2, Example 13.3, Teaching Example 13.3, Example 13.4, Teaching Example 13.4, Example 13.5,	Exercise 13A (p. 13.15) Level 1: 1 – 23 Level 2: 24 – 34 Rev. Ex. 13 (p. 13.41) Level 1: 1 – 8, 10, 12, 14, 16,			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			Calculus. Teachers may skip the proof of the Fundamental Theorem of Calculus.		Teaching Example 13.5, Example 13.6, Teaching Example 13.6 Exploration: 13.1 5-Minute Lecture: Concept of Definite Integration Animation: Concept of Definite Integration	19 Level 2: 36, 48, 49			
			13.2 Evaluating Definite Integrals by Substitution To evaluate definite integrals of algebraic functions, trigonometric functions, exponential functions and logarithmic functions by substitution. The main concept of finding definite integral by substitution is to transform the	4	Example 13.7, Teaching Example 13.7, Example 13.8, Teaching Example 13.8, Example 13.9, Teaching Example 13.9, Teaching Example 13.9 (Extra), Example 13.10, Teaching Example 13.10, Example 13.11, Teaching Example 13.11	Exercise 13B (p. 13.23) Level 1: 1 – 22 Level 2: 23 – 45 Rev. Ex. 13 (p. 13.41) Level 1: 9, 11, 13, 15, 17, 18, 20 – 23 Level 2: 34, 35, 37, 38, 40 – 44, 47,			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			integrand to another form that the primitive function can be found with basic integration rules.		5-Minute Lecture: Evaluating Definite Integrals by Substitution	50, 52 – 56, 58, 59			
			13.3 Evaluating Definite Integrals Using Integration by Parts To evaluate definite integrals of algebraic functions, trigonometric functions, exponential functions and logarithmic functions using integration by parts. Techniques of using integration by parts in this section are similar to those in Chapter 12.	4	Example 13.12, Teaching Example 13.12, Teaching Example 13.12 (Extra), Example 13.13, Teaching Example 13.13, Example 13.14, Teaching Example 13.14, Example 13.15, Teaching Example 13.15, Example 13.16, Teaching Example 13.16 5-Minute Lecture: Evaluating Definite Integrals Using Integration by Parts	Exercise 13C (p. 13.30) Level 1: 1 – 12 Level 2: 13 – 22 Rev. Ex. 13 (p. 13.41) Level 1: 25 – 32 Level 2: 39, 45, 46, 51			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			<p>13.4 More about Definite Integrals</p> <ul style="list-style-type: none"> • To understand the properties of the definite integrals of odd, even and periodic functions. • To evaluate definite integrals of odd, even and periodic functions using these properties. <p>Proofs of the theorems in this section are not difficult. Teachers may explain the proofs given in the appendix on p.E.22.</p>	3.5	<p>Example 13.17, Teaching Example 13.17, Example 13.18, Teaching Example 13.18, Example 13.19, Teaching Example 13.19, Example 13.20, Teaching Example 13.20, Teaching Example 13.20 (Extra)</p> <p>5-Minute Lecture: Definite Integrals of Odd and Even Functions</p> <p>5-Minute Lecture: Definite Integrals of Periodic Functions</p>	<p>Exercise 13D (p. 13.36) Level 1: 1 – 12 Level 2: 13 – 22 Rev. Ex. 13 (p. 13.41) Level 1: 24, 33 Level 2: 57</p>			
	36-39	Chapter 14 Applications of Definite Integration	<p>14.1 Finding Plane Areas by Definite Integration</p> <p>To use definite integration to</p>	4	<p>Example 14.1, Teaching Example 14.1, Example 14.2, Teaching Example 14.2, Example 14.3,</p>	<p>Exercise 14A (p. 14.14) Level 1: 1 – 20 Level 2: 21 – 30 Rev. Ex. 14 (p.</p>			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			<p>find the areas of plane figures.</p> <p>When students find the area bounded by a certain curve, the graph of the curve sometimes is not given. Teachers should remind students to sketch the curve first so that they know the position of the bounded region.</p>		<p>Teaching Example 14.3, Example 14.4, Teaching Example 14.4 Example 14.5, Teaching Example 14.5, Example 14.6, Teaching Example 14.6, Teaching Example 14.6 (Extra), Example 14.7, Teaching Example 14.7, Teaching Example 14.7 (Extra), Example 14.8, Teaching Example 14.8, Example 14.9, Teaching Example 14.9</p> <p>Exploration: 14.1</p> <p>5-Minute Lecture: Finding Plane Areas by Definite Integration</p>	<p>14.56)</p> <p>Level 1: 1 – 6, 10</p> <p>Level 2: 29 – 31</p>			
			<p>14.2</p> <p>Finding Volumes of Solids of</p>	5	<p>Example 14.10, Teaching Example</p>	<p>Exercise 14B (p. 14.36)</p>			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			<p>Revolution by the Disc Method</p> <ul style="list-style-type: none"> • To use the disc method to find the volume of a solid revolved about one of the coordinate axes. • To use the disc method to find the volume of a solid revolved about a straight line parallel to one of the coordinate axes. <p>Teachers may use the animation provided in the Teaching CD-ROM so that students can visualize the concept of the Disc Method.</p>		<p>14.10, Example 14.11, Teaching Example 14.11, Example 14.12, Teaching Example 14.12, Example 14.13, Teaching Example 14.13, Example 14.14, Teaching Example 14.14, Example 14.15, Teaching Example 14.15, Example 14.16, Teaching Example 14.16, Example 14.17, Teaching Example 14.17, Example 14.18, Teaching Example 14.18,</p>	<p>Level 1: 1 – 18 Level 2: 19 – 31</p> <p>(Students may choose Disc Method or Shell Method to solve the following questions in Rev. Ex.)</p> <p>Rev. Ex. 14 (p. 14.56)</p> <p>Level 1: 16 – 27 Level 2: 28 – 32, 34 – 41, 45, 46</p>			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
					Teaching Example 14.18 (Extra), Example 14.19, Teaching Example 14.19, Example 14.20, Teaching Example 14.20, Teaching Example 14.20 (Extra), Example 14.21, Teaching Example 14.21 5-Minute Lecture: Disc Method Animation: Finding Volumes of Solids of Revolution – Disc Method				
			14.3 Finding Volumes of Solids of Revolution by the Shell Method • To use the shell method to	3	Example 14.22, Teaching Example 14.22, Example 14.23, Teaching Example 14.23,	Exercise 14C (p. 14.49) Level 1: 1 – 12 Level 2: 13 – 18 (Students may			

School Term	Weeks	Topics	Learning Objectives/ Teaching Focus	SL/AL	Teaching and Learning Activities	Consolidation and Assessment	Self-directed Learning Skills [♦]	Values [#]	Basic Law Education
			<p>find the volume of a solid revolved about one of the coordinate axes.</p> <ul style="list-style-type: none"> To use the shell method to find the volume of a solid revolved about a straight line parallel to one of the coordinate axes. <p>Method with the website below.</p> <p>http://mathdemos.gcsu.edu/mathdemos/shellmethod/gallery/gallery.html</p> <p>So, students can visualize the concept of the Shell Method.</p>		<p>Example 14.24, Teaching Example 14.24, Example 14.25, Teaching Example 14.25, Teaching Example 14.25 (Extra)</p> <p>5-Minute Lecture: Shell Method</p>	<p>choose Disc Method or Shell Method to solve the following questions in Rev. Ex.) Rev. Ex. 14 (p. 14.56) Level 1: 16 – 27 Level 2: 28 – 32, 34 – 41, 45, 46</p>			

Core Values of Wah Yan College, Kowloon

I. Love and care	1. Accept & feel positive about himself 2. Appreciation & Gratitude 3. Empathy & Compassion	4. Forgiveness & Reconciliation 5. Service 6. Family as a basic unit of society; marriage is the foundation of a family
II. Strive for excellence	7. Reflective 8. Commitment	10. Curiosity & willingness to learn 11. Value imagination and creativity

	9. Perseverance	
III. Respect and Justice	12. Life is valuable and respectable 13. Openness to good in all things 14. Respect for himself & others	15. Integrity 16. Faithfulness
IV. Responsibility	17. Freedom & Self-discipline 18. Care for the environment	19. Social Identities: citizen identity, national identity and global citizen identity
V. Faith	20. Experience of God 21. Explore & practise one's faith	22. Appreciate religious liturgies