Diploma Program Outline (2025-2027)

Subject: MATH AA HL

Week	Week of…	Topic / Unit / Text	Content / Skill Development	Graded Assessments
Year 1 Semester 1				
1	August 18	Number and Algebra	• Number patterns and sigma notation	
2	August 25	Number and Algebra	• Arithmetic and geometric sequences	
3	September 2	Number and Algebra	• Arithmetic and geometric series	
4	September 8	Number and Algebra	• Applications of arithmetic and geometric patterns, Financial applications • Summative Assessment • Summative Assessment Review	Paper 1 2 style assessments
5	September 15	Functions	• Relation, Function and Function Notation • Domain and range • Draw/sketch graphs of functions • Rational functions< Quadratic function	
6	September 22	Functions	• Domain and range, • Composite functions • Inverse functions • Log and exponential function, Laws of Logs, Absolute value function	
7	September 29	National Holiday		
8	October 6	Functions	• Sign diagram, Inequalities • Transformations	
9	October 13	Function	• Summative Assessment • Summative Assessment Review	Paper 1 2 style assessments
10	October 20	Trigonometry	• Radian angle, Area of sector, Arch length • Right angled trigonometry • Unit circle, Identities	
11	October 27	Trigonometry	• Graphs of Trigonometric functions • Transformations of Trig functions • Compound angle, double angle identities	
12	November 3	Trigonometry	• Solving Trig equations • Problem solving • Unit review	
13	November 10	Number and algebra	• Summative Assessment • Summative Assessment Review • Binomial theorem and expansion(For positive Integer)	Paper 1, 2 style assessments
14	November 17	Number and algebra	• Binomial coefficients • General term	
15	November 24	Week Without Wall		
16	December 1	Number and algebra	• Binomial expansion- General term • Problem solving • Binomial theorem for Rational number	
17	December 8	Calculus-Differentiation	• Rate of change/gradient/slope • Limits • Concept of derivative as slope • First principle of derivative	
18	December 15	Calculus-Differentiation	• Basic rules of differentiation • Product law, Quotient law • Chain rule	
19	December 22	Christmas & New Year		
20	December 30	Christmas & New Year		
21	January 5	Calculus-Differentiation	• Tangent and normal • Implicit differentiation • Stationary points • First derivative diagram and its interpretation, Maxima-Minima	
22	January 12	Calculus-Differentiation	• Inflexions • Optimization • Related rates	

Week	Week of…	Topic / Unit / Text	Content / Skill Development	Graded Assessments
23	January 19	Calculus-Differentiation	• Concavity • Second derivative diagram • Problem solving • Summative Assessment • Summative Assessment Review	Paper 1, 2 style assessments
			Year 1 Semester 2	
1	January 26	**Calculus-Integration**	• Integration as Antiderivative • Basic Integration laws • Integration by substitution	
2	February 2	**Calculus-Integration**	• Integration by substitution • More complex substitution • Integration by parts	
3	February 9	**Calculus-Integration**	• Area under the curve, between two curves • Definite integration • Integration by parts	•
4	**February 16**	**Chinese New Year**		
5	**February 23**	**Chinese New Year**		
6	March 2	**Calculus-Integration**	• Volume of revolution • Kinematics	
7	March 9	**Calculus-Integration**	• Problem solving • Summative Assessment • Summative Assessment Review	Paper 1, 2 style assessments
8	March 16	**Introduction to Math IA Number and Algebra**	• IA criteria unpacking, samples grading, Mind map • Mathematical induction	
9	March 23	**Number and Algebra**	• Proofs, contradiction •	
10	March 30	**Number and Algebra**	• Problem solving • Summative Assessment • Summative Assessment Review • IA topic proposal	Paper 1, 2 style assessments
11	**April 6**	**Easter Holiday**		
12	April 13	**Statistics and Probability**	• Revising-Mean, median, mode, • Variance, Standard deviation • Data type • Sampling • Linear regression	
13	April 20	**Statistics and Probability**	• Introduction to probability • Laws of probability, Sample space, Tree diagram • Dependent and independent events, combined events	
14	April 27	**Statistics and Probability**	• Conditional probability • Permutation and combination, counting principle	
15	May 4	**Statistics and Probability**	• Bayes theorem and reverse conditional probability • Discrete probability distribution	
16	May 11	**Statistics and Probability**	• Binomial probability distribution • Continuous probability distribution	
17	**May 18**	**Statistics and Probability**	• Normal probability distribution	
18	**May 25**	**Final Exam Week**		
19	June 1		• More practice on Normal distribution	
20	June 8		• Revision	
21	**June 15**	**Collaborative Science Project**		
Year 2 Semester 1			
1	**August**	Complex numbers	• Introduction to complex numbers • Complex roots of polynomials	
2	**August**	Complex numbers	• Conjugates, properties/Algebra on complex numbers • Simplification of complex expressions	
3	**September**	Complex numbers	• Cube roots of unity • De' Moivre's theorem • Finding roots using De' Moivre's theorem	
4	**September**	Complex numbers	• More applications on De' Moivre's theorem	

Week	Week of…	Topic / Unit / Text	Content / Skill Development	Graded Assessments
			• Induction with complex numbers	
5	**September**	Complex numbers	• More complex problem solving	
6	**September**	Complex numbers	• Unit Review • Summative Assessment • Summative Assessment Review	• Paper 1, 2 style assessments
7	**October**	**National Holiday**		
8	**October**	**Vectors**	• Introduction to vectors • Representation, Notation and algebra • Vector addition • Triangle inequality	
9	**October**	**Vectors**	• Parallelogram law • Scalar multiplication • Scalar product and its significance	
10	**October**	**Vectors**	• Vector product and its significance • Area of parallelogram • Triple product and volume	
11	**October**	**Vectors**	• Vector equation of line and its applications	
12	**November**	**Vectors**	• Vector equation of plane and its applications	
13	**November**	**Vectors**	• Intersection of planes • Unit Review • Summative Assessment • Summative Assessment Review	• Paper 1, 2 style assessments
14	**November**	**Calculus**	• Limits revisit • Differential equations-Euler's method • Variable separable method • Integrating factor	
15	**November**	**Calculus**	• Homogeneous equations • Maclaurin's series • Differentiating and integrating Maclaurin's series	
16	**December**	**Calculus**	• Problem solving and practice	
17	**December**	Calculus	• Unit Review • Summative Assessment • Summative Assessment Review	Paper 1, 2 style assessments
18	**December**	**Review**	•	
19	**December**	**Christmas & New Year**		
20	**January**	**Christmas & New Year**		
21	**January**	**Review**	• Review	
1	**January**	**Review**	• Review	
2	**January**	**Review**	• Review	
3	**January**	**Chinese New Year**		
4	**February**	**Chinese New Year**		
5	**February**	**DP Mock Examination Review**		
6	**February**	**DP Mock Examination**		
7	**February**	**Review**	• Review	
8	**March**	**Review**	• Review	
9	**March**	**Review**	• Review	
10	**March**	**Review**	• Review	
11	**March**	**Review**	• Review	
12	**March**	**Review**	• Review	
13	**March**	**Review**	• Review	
14	**April**	**Easter Holiday**		
15	**April**	**Review**	• Review	
16	**April - May**	**IB DP May Examination**		