Aims of Senior Secondary Mathematics Curriculum

The Mathematics Curriculum (S4 – 6) is a continuation of the Mathematics Curriculum (S1 – 3). It aims to:

(a) further develop students' mathematical knowledge, skills and concepts;

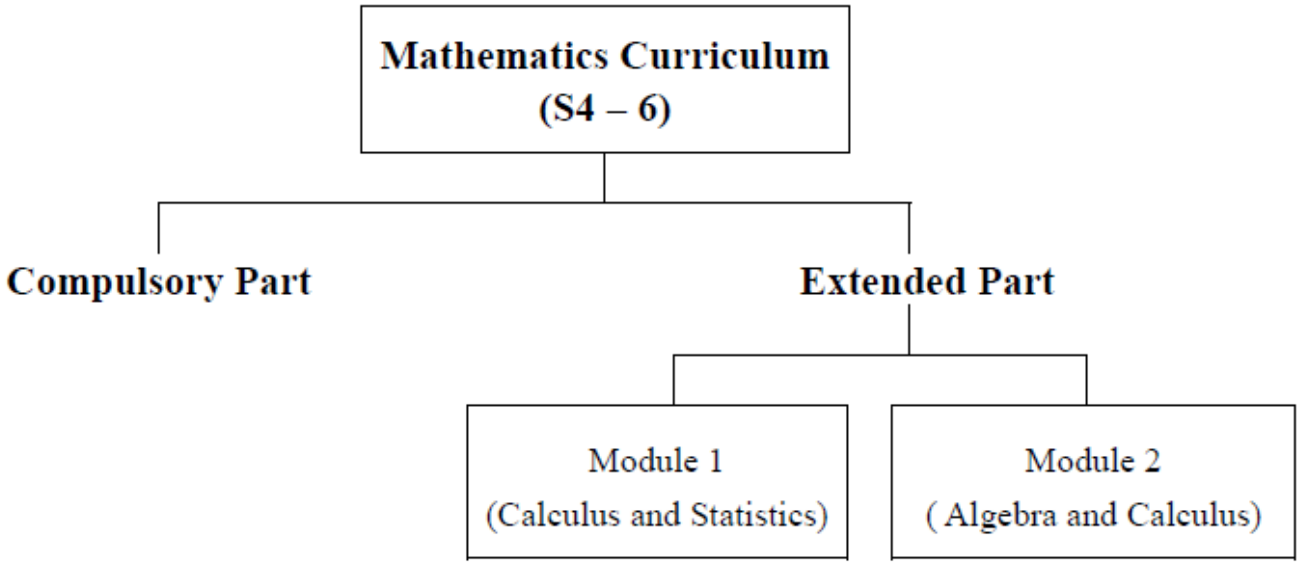
(b) provide students with mathematical tools for their personal development and future career pathways;

(c) provide a foundation for students who may further their studies in Mathematics or related areas;

(d) develop in students the generic skills, and in particular, the capability to use mathematics to solve problems, reason and communicate;

Framework of Senior Secondary Mathematics Curriculum

The structure of the Mathematics Curriculum (S4 – 6) can be represented diagrammatically as follows:



[*Note: Students may take the Compulsory Part only, the Compulsory Part with Module 1 (Calculus and Statistics) or the Compulsory Part with Module 2 (Algebra and Calculus). Students are only allowed to take at most one module from the Extended Part.*]

HKDSE Mathematics Curriculum (Core)

Junior Mathematics Curriculum		NSS Mathematics Curriculum (Core)
1. Directed numbers	21. Pythagoras' Theorem	1. Quadratic equations in one unknown
2. Approximation and error	22. Trigonometric ratios	2. Functions and graphs
3. Numerical estimation	23. Area and volume	3. Exponential and logarithmic functions
4. Using algebra to solve problems	24. Sectors, cones and similar solids	4. More about polynomials
5. Linear equations in one unknowns	25. Symmetry and transformations	5. More about equations
6. Linear equations in two unknowns	26. Three dimensional figures	6. Variations
7. Rational and irrational numbers	27. Introduction to coordinates	7. Arithmetic and geometric sequences and their summation
8. Laws of indices	28. Coordinate geometry of straight lines	
9. Formulae and identities	29. Measures of central tendency	8. Inequalities and linear programming
10. Percentages	30. Introduction to statistics	9. More about graphs of functions
11. Factorization of polynomials	31. Statistical charts	10. Basic properties of circles
12. Manipulation of polynomials	32. Introduction to probability	11. Locus
13. Inequalities		12. Equations of straight lines and circles
14. Rate and ratio		13. More about trigonometry
15. Introduction to geometry		14. Permutation and combination
16. Estimation in measurement		15. More about probability
17. Introduction to deductive geometry		16. Measures of dispersion
18. Angles in rectilinear figures		17. Uses and abuses of statistics
19. Congruence and similarity of triangles		18. Further applications
20. Quadrilaterals		Arithmetic operations of complex numbers

HKDSE Mathematics Curriculum (Extended Part)

Module 1

Fundamental Knowledge
- Binomial Theorem
- Exponential Function and Logarithmic Function

Introduction to Differentiation with Application
- Derivative of a function
- Differentiation of a function
- Second derivative
- Application of differentiation

Introduction to Integration with Application
- Indefinite integrals and their applications
- Definite integrals and their applications
- Approximation of definite integrals using trapezoidal rule

Further Probability
- Conditional probability and independence
- Bayes' Theorem

Binomial, Geometric and Poisson Distributions

Normal Distribution

Point and Interval Estimation

Module 2

Fundamental Knowledge
- Surds
- MI
- Binomial Theorem
- More about trigonometric functions
- Introduction to e

Limits and Differentiation
- Limit
- Differentiation
- Applications of differentiation

Integration
- Indefinite integration
- Definite integration
- Application of definite integration

Matrices and Systems of Linear Equations
- Matrices
- Determinants
- Systems of linear equations

Vectors
- Introduction to vectors
- Scalar and dot products
- Applications of vectors