NORTHBROOKS SECONDARY SCHOOL
SOARING YET ROOTED

Sec 2 Subject Information:
Additional Mathematics (Exp)

Combination offered for Exp stream:

1. Additional Mathematics is offered as an elective subject, in addition to compulsory subjects such as English Language, Mother Tongue, Mathematics, Pure/Combined Science, Pure/Combined Humanities.

2. Please note that subject combinations are reviewed annually and is subject to change.

Additional Mathematics Syllabus in a nutshell

The Additional Mathematics syllabus aims to enable students who have an <u>aptitude and interest in Mathematics</u> to:

a. acquire mathematical concepts and skills for <u>higher studies</u> in mathematics and to support learning in the other subjects, with emphasis in the sciences, but not limited to the sciences;

b. develop thinking, reasoning, communication, application and metacognitive skills through a mathematical approach to <u>problem-solving</u>;

c. <u>connect ideas</u> within mathematics and between mathematics and the sciences through applications of mathematics; and

d. appreciate the <u>abstract nature</u> and power of mathematics.

Additional Mathematics Syllabus content

The content is organised into three strands: Algebra, Geometry and Trigonometry, and Calculus. Topics covered are shown below.

Algebra	Geometry & Trigonometry	Calculus
Quadratic functions	Trigonometric functions, identities and equations	Differentiation and integration
Equations and inequalities	Coordinate geometry in two dimensions	
Surds	Proofs in plane geometry	
Polynomials and partial fractions		
Binomial expansions		
Exponential and logarithmic functions		

Assessment Objectives

AO1   Use and apply standard techniques

1.   recall and use facts, terminology and notation
2.   read and use information directly from tables, graphs, diagrams and texts
3.   carry out routine mathematical procedures

AO2   Solve problems in a variety of contexts

1.   interpret information to identify the relevant mathematics concept, rule or formula to use
2.   translate information from one form to another
3.   make and use connections across topics/subtopics
4.   formulate problems into mathematical terms
5.   analyse and select relevant information and apply appropriate mathematical techniques to solve problems
6.   interpret results in the context of a given problem

AO3   Reason and communicate mathematically

1.   justify mathematical statements
2.   provide explanation in the context of a given problem
3.   write mathematical arguments and proofs

Scheme of Assessment

Paper	Duration	Description	Marks	Weighting
Paper 1	2 h 15 min	There will be 12 – 14 questions of varying marks and lengths. Candidates are required to answer all questions.	90	50%
Paper 2	2 h 15 min	There will be 9 – 11 questions of varying marks and lengths. Candidates are required to answer all questions.	90	50%

Difference in Elementary vs Add Mathematics

1. Elementary Mathematics is influenced by a stronger orientation towards learning mathematics <u>as a tool</u>, whereas Additional Mathematics is influenced by a stronger orientation towards learning mathematics <u>as a discipline</u>.

2. Students who want to pursue Add Mathematics need to have:

   1. <u>Aptitude</u> and <u>interest</u> in Mathematics

   2. A strong foundation in <u>algebraic manipulation</u> and mathematical <u>reasoning</u>

   3. Values such as <u>persistence</u> and <u>resilience</u>

Post-Secondary Progression

1. Admission to Junior College (JC) / Millennia Institute (MI)
   a. **Not a compulsory subject** for computation of L1R5 (JC) / L1R4 (MI)
   b. **Not a requisite subject** to offer Mathematics H1
   c. Depending on the JC/ MI, Additional Math **may** be a requisite subject to offer Mathematics H2

2. Admission to Polytechnic
   a. **Not a compulsory** subject for computation of ELR2B2

3. Please note that the admission requirements are subject to changes by the respective post-secondary institutions.

Useful links

For more information about the O level Additional Mathematics syllabus, scan this code:

https://for.edu.sg/2023oamath