Mathematics

IGCSE Additional Mathematics

Subject: Mathematics

Course Title: IGCSE Additional Mathematics

Why study this subject:

Cambridge IGCSE Additional Mathematics is accepted by universities and employers as proof of essential

Mathematical knowledge and ability.

The Additional Mathematics syllabus is intended for high ability candidates who have achieved, or are likely

to achieve, Grade A*, A or B in the Cambridge IGCSE Mathematics examination.

Successful Cambridge IGCSE Additional Mathematics candidates gain lifelong skills, including:

● the further development of mathematical concepts and principles

● the extension of mathematical skills and their use in more advanced techniques

● an ability to solve problems, present solutions logically and interpret results

● a solid foundation for further study.

Prior learning

We recommend that candidates who are beginning this course should be currently studying or have

previously studied Cambridge IGCSE or Cambridge O Level Mathematics.

Syllabus aims:

The aims are to enable candidates to:

● consolidate and extend their elementary mathematical skills, and use these in the context of more advanced techniques

● further develop their knowledge of mathematical concepts and principles, and use this knowledge for problem solving

- appreciate the interconnectedness of mathematical knowledge

- acquire a suitable foundation in mathematics for further study in the subject or in mathematics related subjects

- devise mathematical arguments and use and present them precisely and logically

- integrate information technology (IT) to enhance the mathematical experience

- develop the confidence to apply their mathematical skills and knowledge in appropriate situations

- develop creativity and perseverance in the approach to problem solving

- derive enjoyment and satisfaction from engaging in mathematical pursuits, and gain an appreciation of the beauty, power and usefulness of mathematics.

Assessment at a glance:

Paper	Duration	Marks
Paper 1 Structured and unstructured questions. Use of a calculator is **not** allowed. Externally assessed.	**2 hours**	**80 (50%)**
Paper 2 Structured and unstructured questions. A scientific calculator is required. Externally assessed	**2 hours**	**80 (50%)**

Grades A* to E will be available for candidates who achieve the required standards. Since there is no Core Curriculum for this syllabus, Grades F and G will not be available. Therefore, candidates who do not achieve the minimum mark for Grade E will be unclassified.

Syllabus Content

The Additional Mathematics syllabus is intended for high ability candidates who have achieved, or are likely to achieve Grade A*, A or B in the Cambridge IGCSE Mathematics examination. The curriculum objectives are therefore assessed at one level only (Extended). As for Extended level syllabuses in other subjects, Grades A* to E will be available.

The Curriculum objectives (Core and Supplement) for Cambridge IGCSE Mathematics will be assumed as prerequisite knowledge.

- Set language and notation

- Functions

- Quadratic Functions

- Indices and Surds

- Factors of Polynomials

- Simultaneous Equations

- Logarithmic and exponential Functions

- Straight line graphs

- Circular measure

- Trigonometry

- Permutations and Combinations

- Binomial Expansions

- Vectors in Two Dimensions

- Matrices

- Differentiation and Integration