FURTHER MATHEMATICS

Exam Board: EDEXCEL

Aims of the Course

The study of Further Mathematics will enable students to:

- develop their understanding of Mathematics and mathematical processes in a way that promotes confidence and fosters enjoyment.
- extend their range of mathematical skills and techniques and use them in more difficult unstructured problems.
- recognise how a situation may be represented mathematically and understand the relationship between 'real world' problems and standard and other mathematical models and how these can be refined and improved.
- read and comprehend mathematical arguments and articles concerning applications of mathematics.
- develop an awareness of the relevance of mathematics to other fields of study, to the world of work and to society in general.

Types of Learning Experience:
Students will study three units in Year 12 to achieve AS level and three further units in Year 13 to complete A2 (details inside). The course content is delivered through lectures, classroom discussion, practical activities, use of IT and personal research.

Link Subjects:
Mathematics may be taken with any other subjects, and it is particularly valuable to Economics, Business studies, Physics and Chemistry. Further Mathematics must be taken with A level Mathematics.

Progressing to Higher Education:
The problem solving skills and ability to tackle tasks logically gained from Maths, make Mathematics relevant to many subjects at Higher Education and University. Mathematics is a highly recognised Advanced level subject for entry to University and Higher Education and it is a useful stepping stone to Engineering, Sciences, Computing and Business related subjects.

Careers:
Mathematics is especially relevant to those wishing to pursue careers in Finance, Business, Research, Engineering, Education, Accountancy and IT.
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*Entry requirements***:**

A minimum of 5 grades 9-4 at GCSE including English and Maths. GCSE grade 8 in Maths is essential. Students should have achieved this grade from a Year 11 top set in Maths.

Unit 1 Applied Maths—Two of the following

Decision Mathematics 1
- Algorithms
- Graph Theory
- Networks
- Linear Programming

Decision Mathematics 2
- Game theory
- Flows in a network
- Matching and allocation problems
- Critical path analysis
- Dynamic programming

Further Probability and Statistics
- Continuous random variables
- The normal and Normal distribution
- Sampling and hypothesis testing
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Assessment
1hr 30min written paper for each module (all questions compulsory)

Unit 2

Core Pure Mathematics 1 and 2
- Summation of series
- Mathematical induction
- Roots of polynomial equations
- Complex numbers
- Matrices

Assessment:
Two 1hr 30min written assessment (all questions should be attempted).
Calculators allowed – Graphics calculator recommended.