

# Further Mathematics

## Exam Board: WJEC

Further Mathematics AS or A2 can only be taken if Mathematics is being studied. The course is designed for able mathematics students who would like to develop greater knowledge and understanding than the normal A Level provides. The long-standing popularity of Further Mathematics is a notable feature of this school. By adding both breadth and depth to students' experience of mathematics the Further Mathematics course gives them insight into the beauty and elegance of the subject, and often inspires further study. Further Mathematics is desirable for the study of mathematics, economics, physics, engineering and other sciences at university, especially those in the research intensive universities. For some of the most selective universities it is a requirement.

### Minimum Entry Requirements

- A minimum of 6 A\* to C grades at GCSE with an A grade in Mathematics.

If you have any queries, please contact Mr M Wagner (Head of Faculty).

### AS course

Pupils must study all three AS units. There is a mixture of pure and applied topics including further calculus, matrices, random variables, linear regression, the Chi-squared distribution, circular motion and Hooke's Law.

**Unit 1: Further Pure Mathematics (AS Level 33⅓% / A Level 13⅓%)**

**Unit 2: Further Statistics (AS Level 33⅓% / A Level 13⅓%)**

**Unit 3: Further Mechanics (AS Level 33⅓% / A Level 13⅓%)**

### A2 course

Students continue to deepen their knowledge of pure and applied mathematics. In the new specification, Unit 4 is compulsory. Pupils will then sit either Unit 5 or Unit 6. Topics include hyperbolic functions, further matrices, polar co-ordinates, non-parametric tests, confidence intervals, modelling using differential equations and simple harmonic motion.

**Unit 4: Further Pure Mathematics (A Level 35%)**

**Unit 5: Further Statistics (A Level 25%)**

**Unit 6: Further Mechanics (A Level 25%)**

### Career Opportunities

The following is a list of some of the employment areas in which advanced mathematical skills are highly valued: accountancy, aerospace, automotive, defence, business support services, chemicals, construction, consultancy, engineering, environment, financial services, local and national government, healthcare, information systems, insurance, management, manufacturing, metals and minerals, pharmaceuticals, scientific research, social policy research, telecommunications, transport, and utilities.