FURTHER MATHEMATICS

Offered as a fourth A-Level only, to be taken alongside Mathematics.

EXAM BOARD: Pearson Edexcel

Exams x 3 Papers 100%

Why study Further Mathematics?
Mathematics touches more aspects of modern living than ever before – communications, media, and financial management as well as computer and physical sciences, engineering, technology and business related subjects.

Mathematics gives future employers, universities and colleges clear evidence of highly valued numeracy and problem-solving skills irrespective of the actual role/course being considered.

Here at Stratford upon Avon School, we have staff who, prior to becoming mathematics teachers, have many years direct experience of the application of mathematics within a wide variety of industrial, commercial and public sector organisations – not as mathematicians but as engineers and management accountants and scientists.

An A-Level in Further Mathematics demonstrates mathematical reasoning of the highest order and is very highly regarded by many employers and universities particularly in the engineering, information technology and financial sectors. These will include the Russell Group universities and blue-chip companies looking for the highest calibre applicants for both specialist and general management careers.

Subject Specification Outline:

Pure Mathematics

Core Pure Mathematics 1 and 2: intended to develop mathematical argument, language and proof in the context of problem solving and mathematical modelling. Content will include proof, complex numbers, matrices, further algebra and functions, further calculus, further vectors, polar coordinates, hyperbolic functions and differential equations.

+ a second component that can be chosen from:

- Further Pure Mathematics
- Further Mathematics
- Further Statistics
- Discrete Mathematics

Additional content, to be selected from:

FURTHER PURE MATHEMATICS 1 AND 2
Further trigonometry, further calculus, further differential equations, co-ordinate systems, further vectors, further numerical methods, inequalities, groups, further matrices, further complex numbers, number theory & further sequences and series.

FURTHER MECHANICS 1 AND 2
Dimensional analysis, momentum and impulse, work and power, elastic energy, elastic collisions in one and two dimensions, circular motion, centres of mass, moments, further dynamics and further kinematics.

FURTHER STATISTICS 1 AND 2
Discrete probability distributions, Poisson and binomial distributions, geometric and negative binomial distributions, hypothesis testing, central limit theorem, Chi-squared testing, probability generating functions, quality of testing, linear regression, continuous probability distributions, correlation, combinations of variables and estimating confidence intervals.

DISCRETE MATHEMATICS 1 AND 2
Dimensional analysis, momentum and impulse, work and power, elastic energy, elastic collisions in one and two dimensions, circular motion, centres of mass, moments, further dynamics and further kinematics.

Progress Assessment:

- Regular feedback on classwork
- 3 assessments per year after school
- Year 12 and Year 13 full mock examinations

Final Exam Format: Four equally weighted written papers each of 90 minutes.

Self-Study Requirements: Each taught hour will require a minimum of an additional hour of self study.

Progression Pathways: A-Level Further Mathematics supports a wide range of university level Mathematics courses and also supports an even wider range of science, engineering, economics, business studies, computer science courses (and indeed may be an essential requirement for certain courses/universities).

Why Stratford?

Small class sizes create an atmosphere akin to tutoring and allow the optional module choice to be tailored to the cohort. Bespoke support for Maths university entrance exams.

Our students, beyond Stratford: our 2026 Further Maths students went onto study Mathematics, Computer Science and Motorsport Engineering at the universities of Swansea, Oxford Brookes and Warwick, and have embarked on a Civil Engineering internship.

