

Sir Joseph Williamson's Mathematical School



Department of Mathematics

Induction Week

Sir Joseph Williamson's Mathematical School
Department of Mathematics

Useful Information



$$3 - 2 = 1 \rightarrow$$

$$\sin^2\theta + \cos^2\theta = 1 \rightarrow$$

$$\frac{1}{\sqrt{2\pi}} \int_{-\infty}^{+\infty} e^{-\frac{1}{2}t^2} dt = 1$$

The Department of Mathematics offers A Level and A Level Further Mathematics over a period of two years. A Level Mathematics has fixed content with two Pure Mathematics papers and one combined Mechanics and Statistics paper. Further Mathematics must comprise four units, including two compulsory Core Pure Mathematics units and two Option units. Papers 3 and 4 for Further Mathematics have a range of possible options. The tables below clarify the units required.

A Level Mathematics:

Qualification	Component	Overview
A Level Mathematics	Pure Mathematics – Year 1 / AS Pure Mathematics – Year 2 Statistics and Mechanics – Year 1 / AS Statistics and Mechanics – Year 2	All units are compulsory
	Component / Assessment	
	Paper 1: (2 hours – 100 marks) Pure Mathematics	Any pure mathematics content can be assessed on either paper.
	Paper 2: (2 hours – 100 marks) Pure Mathematics	
Paper 3: (2 hours – 100 marks) Statistics and Mechanics	Section A: Statistics (50 marks) Section B: Mechanics (50 marks)	
AS Level Mathematics	Paper 1: (2 hours – 100 marks) Pure Mathematics	AS pure mathematics content
	Paper 2: (1 hour 15 minutes – 60 marks) Statistics and Mechanics	Section A: Statistics (30 marks) Section B: Mechanics (30 marks)

		This qualification will only be offered in certain circumstances.
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A Level Further Mathematics:

Qualification	Compulsory Core units	Overview
A Level Further Mathematics	<p>Compulsory Units: Core Pure Mathematics – Year 1 / AS Core Pure Mathematics – Year 2</p> <p>Option Units: Further Pure Mathematics 1 Further Pure Mathematics 2 Further Mechanics 1 Further Mechanics 2 Further Statistics 1 Further Statistics 2 Decision Mathematics 1 Decision Mathematics 2</p>	Two compulsory units and two option units.
	Component / Assessment	
	<p>Paper 1: (1.5 hours – 75 marks) Core Pure Mathematics 1</p>	Any core pure mathematics content can be assessed on either paper
	<p>Paper 2: (1.5 hours – 75 marks) Core Pure Mathematics 1</p>	
	<p>Paper 3: (1.5 hours – 75 marks) Further Mathematics Option 1</p>	<p>Students take one of the following four options:</p> <ul style="list-style-type: none"> ▪ Further Pure Mathematics ▪ Further Statistics ▪ Further Mechanics ▪ Decision Mathematics
	<p>Paper 4: (1.5 hours – 75 marks) Further Mathematics Option 2</p>	<p>Students take one of the following four options:</p> <ul style="list-style-type: none"> ▪ Further Pure Mathematics ▪ Further Statistics ▪ Further Mechanics ▪ Decision Mathematics
AS Level Further Mathematics	<p>Paper 1: (1 hour 40 minutes – 80 marks) Core Pure Mathematics</p>	AS core pure mathematics content
	<p>Paper 2: (1 hour 40 minutes – 80 marks) Further Mathematics Option</p>	<p>Same options in A Level Further Mathematics</p> <p>This qualification will only be offered in certain circumstances.</p>

In this Department, for Further Mathematics we are planning to follow a route which takes advantage of the expertise in the department and the success of our Further Mathematics students in recent years. The option units highlighted in bold are the ones which will be offered to the Further Mathematics students. However, this might change depending on the needs of our students.

If you have any questions about anything on this sheet please do not hesitate to contact Dr I Karam, Mr N Daniels or Mr J Afolayan.

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Recommended Calculators

$3 - 2 = 1$

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$\sin^2\theta + \cos^2\theta = 1$

→

$$\frac{1}{\sqrt{2\pi}} \int_{-\infty}^{+\infty} e^{-\frac{1}{2}t^2} dt = 1$$

With the new A-Level Mathematics course, you will need a new scientific calculator to allow you to solve questions faster and more efficiently than the one you have used at GCSE. There are also questions in the statistics section of the course which you will not be able to solve without a calculator which has the probability distributions within it.

The scientific calculator that many of our students use, which we recommend, is the **Casio fx-991EX Classwiz**, this is available on the high street and online.

It must be emphasised that a scientific calculator which has the functions of the calculator we are recommending is an essential requirement for the new A-Level Mathematics course.



Casio fx-991EX
Classwiz

Graphical calculators including the **Casio fx-CG50**, which we recommend, also contains the required functions and additional programming facilities. This graphical calculator can be very useful, in particular if you study A-Level Further Mathematics.

However, it must be noted that a graphical calculator is not an essential requirement for either the new A-Level Mathematics or A-Level Further Mathematics course.



Casio fx-CG50
Graphical Calculator

We will be able to offer the opportunity to purchase a calculator through the school at a price to be confirmed in September. Enjoy your induction and we look forward to welcoming you in September.

Dr I Karam, Director of Mathematics

Mr N Daniels, Head of Mathematics
Mr J Afolayan, KS5 Co-ordinator