

Year 12 Further Mathematics

Learning	Loving	Living
Key Knowledge Link apply and adapt Build knowledge and skills Self-regulated, reflective independent Know what they are good at and what to improve Stretched, challenged supported Wider ideas culture and the world Use technology flexibly and responsibly	Well informed global citizens Believe they can make a difference Shape community and school Care about the environment and each other Responsible for their own behaviour Grow spiritually Respect and tolerance Charity, volunteering and fundraising	Wider learning Leadership, teamwork, collaboration Success for all abilities Value creative subjects Interactions with the world of work Safety, mental and physical health Equipped for their unique future Apply to the world beyond
Curriculum Intent		
<p><u>Provide pupils with the knowledge and skills they need in order to take advantage of opportunities, responsibilities and experiences of later life</u></p> <ul style="list-style-type: none"> ➤ Teach students key skills such as how to analyse and evaluate statements through statistical calculation and interpretation. ➤ Offer students curriculum related opportunities such as the support programme for A* students organised by Imperial College ➤ Develop their understanding of knowledge in lessons and assess these through regular exam-based practice. ➤ Empower students to think strategically when solving problems. ➤ Regular use of independent work to consolidate and extend their understanding on all parts of the specification. ➤ Opportunities to pursue external courses offered by Oxford and Cambridge Universities. <p><u>Clearly state the end points that pupils are building towards and the knowledge and skills required to reach them</u></p> <ul style="list-style-type: none"> ➤ Clear learning objectives in individual and sequential lessons. ➤ Students are aware of their TMG and have a clear understanding of their strengths and areas of improvement through the use of the assessments on a regular basis and feed forward on assessments. ➤ Clear outline of assessment requirements with use of student friendly markschemes from Edexcel. <p><u>Is planned and sequenced so that new knowledge and skills build on what has been taught and builds towards clearly defined end points</u></p> <ul style="list-style-type: none"> ➤ Students study Pure Mathematics topics for Core paper 1 alongside Decision Maths topics for paper 2 allowing students to gain an understanding of the different aspects of Pure and Applied Mathematics so that they can build a full understanding of the subject. ➤ Students study each topic in clear chunks with integrated assessments which allows them to show skill progression. ➤ Pupils work through retrieval homeworks that imbed knowledge 		

Has high ambition for all pupils

- Regular use of stretch and challenge within lessons and on homework tasks.
- Challenging assessment tasks are used within each unit with students also given the opportunity to test their understanding with extension tests via the Integral platform from MEI.
- Problem solving skills are explored and developed.

(2 lessons used for test and review of test- 3 weeks after or later completion of content-these are built into the timings of each chapter. Alternatively, fewer tests can be used or tests can be combined and the multiple choice tests can be used as a homework.)

Term	Topic NB To include Spaced memory retrieval	No. of Lessons	Assessment
Autumn 1 Taught by Teacher 1	<p>Graphs and networks (7 Lessons) (Decision Maths Chap 2)</p> <p>Algorithms on graphs (8 Lessons) (Decision Maths Chap 3)</p>	15 lessons	<p>Integral Assessment Graphs and networks online HW</p> <p>Integral Assessment Algorithms on networks online HW</p> <p>Printed section tests to be used in class rather than at home</p>
Taught by Teacher 2	<p>Complex numbers (9 Lessons) (Core Maths Chap 1)</p> <p>Series (6 Lessons) (Core Maths Chap 3)</p>	15 lessons	<p>Integral Assessment complex numbers</p> <p>Integral Assessment Series</p> <p>Printed section tests to be used in class rather than at home</p>

<p>Autumn 2 Taught by Teacher 1</p> <p>Taught by Teacher 2</p>	<p>October Assessment Algorithms (9 Lessons) (Decision Maths Chap 1) Route inspection (7 Lessons) (Decision Maths Chap 4)</p> <p>Roots of Polynomials (6 Lessons) (Core Maths Chap 4) Matrices (10 Lessons) (Core Maths Chap 6)</p>	<p>16 lessons</p> <p>16 lessons</p>	<p>October Assessment -covering Autumn Term1</p> <p>Integral Assessment Roots of Polynomials</p> <p>Integral Assessment -Algorithms</p> <p>Integral Assessment -Matrices</p>
<p>Spring 1 Taught by Teacher 1</p> <p>Taught by Teacher 2</p>	<p>Linear Programming (8 Lessons) (Decision Maths Chap 6) The travelling Salesman problem (6 Lessons) (Decision Maths Chap 5)</p> <p>Argand Diagrams (9 Lessons) (Core Maths Chap 2) Linear Transformations (5 Lessons) (Core Maths Chap 7)</p> <p>Year 12 Mock exam Week</p>	<p>14 lessons</p> <p>14 lessons</p>	<p>Integral Assessment Route Inspection Integral Assessment Linear programming</p> <p>Integral Assessment Argand diagrams</p>

<p>Spring 2 Taught by Teacher 1</p> <p>Taught by Teacher 2</p>	<p>The travelling Salesman problem (2 Lessons) (Decision Maths Chap 5)</p> <p>The Simplex algorithm (9 Lessons) (Decision Maths Chap 7)</p> <p>Critical Path Analysis (1 Lessons) (Decision Maths Chap 8)</p> <p>Linear Transformations (5 Lessons) (Core Maths Chap 7)</p> <p>Volumes of revolution (8 Lessons) (Core Maths Chap 5)</p>	<p>12 lessons</p> <p>13 lessons</p>	<p>Integral Assessment The travelling Salesman problem</p> <p>Integral Assessment Simplex Algorithm</p> <p>Integral Assessment Linear transformations</p> <p>Integral Assessment Volumes of revolution</p>
<p>Summer 1 Taught by Teacher 1</p> <p>Taught by</p>	<p>Critical Path Analysis (10 Lessons) (Decision Maths Chap 8)</p> <p>Proof by induction (4 Lessons) (Core Maths Chap 8)</p>	<p>14 lessons</p> <p>14 lessons</p>	<p>Integral Assessment Critical Path Analysis</p> <p>Integral Assessment Proof by induction</p>

Teacher 2	<p>Proof by induction (3 Lessons) (Core Maths Chap 8)</p> <p>Vectors (11 Lessons) (Core Maths Chap 9)</p> <p>Revision for progress exam/ Real AS exam</p>		Integral Assessment Differentiation
<p>Summer 2</p> <p>Taught by Teacher 1</p> <p>Taught by Teacher 2</p>	<p>Progress exam</p> <p>Differentiation Pure2 (9 Lessons) (Pure 2 Chap 9)</p> <p>Integration Pure 2 (3 Lessons) (Pure 2 Chap 11)</p> <p>Revision-Recap</p> <p>Integration (11 Lessons) (Pure 2 Chap 11)</p> <p>Revision -Recap</p>	<p>14 lessons</p> <p>14 lessons</p>	<p>Integral assessment Differentiation</p> <p>Integral assessment Integration</p>

Review			
Date	Comment	Staff Code	Actions?
4/7/21	Programme of study completed & checked.	KEL	To be reviewed in Summer 2022.
