

Week/Topic	Chapters	Content
1 <b>Introduction</b>	18	<ul style="list-style-type: none"> <li>Entrance test,</li> <li>What is Mathematics?</li> <li>Assessment, papers, course presentation</li> </ul>
2 <b>Algebra</b>	6.9	<ul style="list-style-type: none"> <li>Permutations, Combinations, Binomial coefficients</li> <li>Pascal's triangle, Binomial Theorem</li> <li>Binomial Expansion</li> </ul>
3	6.1, 6.2,6.5 6.3,6.4,6.6,6.7 6.8	<ul style="list-style-type: none"> <li>Arithmetic sequences and series</li> <li>Geometric sequences and series</li> <li>Applications</li> </ul>
4	4.1 4.2	<ul style="list-style-type: none"> <li>Exponents, laws, the number <math>e</math></li> <li>Exponential equations</li> <li>Applications</li> </ul>
5	4.4, 4.6 4.7 4.8	<ul style="list-style-type: none"> <li>Logarithms, laws, the natural logarithm LN</li> <li>Logarithmic equations</li> <li>Applications</li> </ul>
6		<ul style="list-style-type: none"> <li><b>Revision of Topic 1 – Algebra</b></li> <li>Revision of quadratic functions</li> <li><b>Paper 1</b> and/or <b>Paper 2</b> on Algebra + quadratic functions</li> </ul>
7 <b>Statistics</b>	Chapter 8	<ul style="list-style-type: none"> <li>Mean, mode, quartiles, range, IQR, standard deviation</li> <li>Cumulative frequency, boxplots</li> <li>Univariate analysis</li> </ul>
8	Chapter 10	<ul style="list-style-type: none"> <li>Linear regression</li> <li>Applications</li> <li>Possible topics for the <b>Internal Assessment</b></li> </ul>
9 <b>Probability</b>	3.1 3.2 3.3	<ul style="list-style-type: none"> <li>Venn diagrams, events, basic definitions</li> <li>Product rule for probabilities</li> <li>Mutually exclusive and independent events</li> </ul>
10	3.4 3.5	<ul style="list-style-type: none"> <li>Tree diagrams</li> <li>Conditional Probability</li> <li>Applications</li> </ul>
11		<ul style="list-style-type: none"> <li><b>Revision of Stat&amp;Prob</b></li> <li><b>Paper 2</b> on Stat&amp;Prob</li> </ul>
12 <b>Trigonometry</b> Circular functions	13.1	<ul style="list-style-type: none"> <li>Basic facts about angles</li> <li>Radians and degrees</li> <li>Definition of Sine, Cosine, Tangent</li> </ul>
13	13.2 13.3	<ul style="list-style-type: none"> <li>Values of sine, cosine, tangent for basic angles</li> <li>Identities and formulae</li> <li>Solving trigonometric equations</li> </ul>
14	13.4 13.5 13.6,13.7	<ul style="list-style-type: none"> <li>Basic graphs for Sine, Cosine and Tangent</li> <li>Properties of the graph</li> <li>Modeling using trigonometric functions, applications</li> </ul>
15		<ul style="list-style-type: none"> <li><b>Revision of circular functions</b></li> <li><b>Paper 1</b> on circular functions</li> </ul>
16 <b>Trigonometry</b> Mensuration	11.1 11.2 11.3	<ul style="list-style-type: none"> <li>SOH-CAH-TOA</li> <li>Bearings</li> <li>GDC use</li> </ul>
17	11.4 11.5 11.6 11.7	<ul style="list-style-type: none"> <li>Sine Rule</li> <li>Cosine Rule</li> <li>Arcs and Sectors</li> <li>Area of a triangle, applications</li> </ul>
18		<ul style="list-style-type: none"> <li><b>Revision of Mensuration</b></li> <li><b>Paper 2</b> on mensuration</li> </ul>

19 <b>Trigonometry</b>		<ul style="list-style-type: none"> <li>• <b>Revision of Trigonometry (full topic)</b></li> <li>• <b>Paper 2</b> on trigonometry</li> </ul>
20 <b>Functions</b>	1.1 1.2 1.3	<ul style="list-style-type: none"> <li>• Definition of function</li> <li>• Domain and range</li> <li>• Function Notation</li> </ul>
21	1.4 1.5 16.6	<ul style="list-style-type: none"> <li>• Composite and inverse functions</li> <li>• Modeling using functions</li> <li>• Possible topics for the <b>Internal Assessment</b></li> </ul>
22	17.1 1.6 2.3,2.4	<ul style="list-style-type: none"> <li>• GDC techniques</li> <li>• Transformations of functions</li> <li>• Quadratic inequalities</li> </ul>
23		<ul style="list-style-type: none"> <li>• <b>Revision of Functions</b></li> <li>• <b>Paper 1 and /or 2</b> on functions</li> </ul>
24 <b>Internal Assessment</b>	Chapter 16	<ul style="list-style-type: none"> <li>• The use of Geogebra</li> <li>• Finding the best fit</li> <li>• Comparing models</li> </ul>
25		<ul style="list-style-type: none"> <li>• Assessment criteria</li> <li>• Working on the mathematical exploration</li> </ul>
26 <b>Probability</b>	15.1	<ul style="list-style-type: none"> <li>• Discrete vs Continuous</li> <li>• Random Variables</li> <li>• Probability Distributions</li> </ul>
27		<ul style="list-style-type: none"> <li>• Binomial distribution</li> <li>• Applications</li> </ul>
28		<ul style="list-style-type: none"> <li>• Normal distribution</li> <li>• Applications</li> </ul>
29		<ul style="list-style-type: none"> <li>• <b>Revision of Probability Distributions</b></li> <li>• <b>Paper 2</b> probability distributions</li> </ul>
31 <b>Revision</b>		<ul style="list-style-type: none"> <li>• Revision: Algebra, Functions</li> </ul>
32		<ul style="list-style-type: none"> <li>• Revision: Trigonometry, Stat&amp;Prob</li> </ul>
33 <b>Final Exam</b>		<ul style="list-style-type: none"> <li>• Paper 1 from the previous years</li> </ul>

Week/Topic	Chapters	Content
1 <b>Test</b>	Chapter 5 Chapter 11 Chapter 13	<p><b>Entrance test</b> - Paper 2 on</p> <ul style="list-style-type: none"> <li>Rational functions</li> <li>Trigonometry</li> </ul>
2 <b>Revision</b>	3.4 Chapter 15 6.9	<ul style="list-style-type: none"> <li>Conditional Probability</li> <li>Probability distributions</li> <li>Binomial Expansion</li> </ul>
3	Chapter 1 Chapter 16	<ul style="list-style-type: none"> <li>Revision of functions</li> <li><b>Internal assessment check</b></li> </ul>
4 <b>Calculus</b> Derivatives	7.1	<ul style="list-style-type: none"> <li>Limits and convergence</li> <li>Definition of derivative</li> <li>Use of first principles</li> </ul>
5	7.2 7.3	<ul style="list-style-type: none"> <li>Derivatives of elementary functions</li> <li>Rules for derivation: product and quotient</li> <li>Exercises on derivation</li> </ul>
6	7.4	<ul style="list-style-type: none"> <li>Chain rule and higher order derivatives</li> <li>Tangent and normal lines</li> <li><b>Paper 1:</b> derivatives and tangent lines</li> </ul>
7	7.6	<ul style="list-style-type: none"> <li>First derivative test, maxima and minima</li> <li>Second derivative test, maxima and minima</li> <li>Finding concavity and inflection points</li> </ul>
8	7.7	<ul style="list-style-type: none"> <li>The relationship between the graph of a function and that of its first and second derivative</li> <li>Drawing functions using derivatives</li> </ul>
9	7.5 7.6 7.7	<ul style="list-style-type: none"> <li>Applications of differential calculus</li> <li>Optimization</li> <li>Linear motion</li> </ul>
10		<ul style="list-style-type: none"> <li><b>Revision of Derivatives</b></li> <li><b>Paper 2 :</b> Differential calculus</li> </ul>
11		<ul style="list-style-type: none"> <li><b>Internal assessment check</b></li> </ul>
12 <b>Calculus</b> Integrals	9.1 9.2	<ul style="list-style-type: none"> <li>Antiderivatives</li> <li>Indefinite integrals</li> <li>Integrals with Sine and Cosine</li> </ul>
13	14.3 13.4	<ul style="list-style-type: none"> <li>Finding the primitive of a function through a point</li> <li>Linear motion</li> </ul>
14		<ul style="list-style-type: none"> <li>Revision of integrals</li> <li><b>Paper 1:</b> indefinite integrals</li> </ul>
15		<ul style="list-style-type: none"> <li>Definite integrals, fundamental theorem of calculus</li> <li>Area under a curve</li> </ul>
16	9.5 9.6 9.7	<ul style="list-style-type: none"> <li>Area between two curves</li> <li>Volumes of revolution</li> <li>Application of integrals</li> </ul>
17		<ul style="list-style-type: none"> <li>Revision of calculus</li> <li><b>Paper 2:</b> derivatives and integrals</li> </ul>
18 <b>Vectors</b>		<ul style="list-style-type: none"> <li>Basic concepts</li> <li>Addition and subtraction</li> <li>Scalar product</li> </ul>
19		<ul style="list-style-type: none"> <li>Problems using vectors</li> <li>Vector equation of a line in 2D and in 3D</li> <li>Angle between two lines</li> </ul>
20		<ul style="list-style-type: none"> <li>Revision of vectors, <b>Paper 2</b></li> </ul>
21-26	Revision	<ul style="list-style-type: none"> <li>Mock exams, revision of topics (one topic per week)</li> </ul>