



# Programme of Study – AS/A Pure Mathematics 1

	Theme	Overview of key learning to take place	How learning will be assessed
Term 2	Integration	<p><b>Chapter 9: Integration</b></p> <p>9.1 I can Integrate simple functions</p> <p>9.2 I can Integrate complex functions</p> <p>9.3 I can Find the constant of integration by substituting in a given point</p> <p>9.4 I can integrate <math>(ax + b)^n</math> (for any rational <math>n</math> except <math>-1</math>), together with constant multiples, sums and differences</p> <p>9.5 I can solve problems involving the evaluation of a constant of integration.</p> <p>9.6 I can evaluate definite integrals; including simple cases of 'improper' integrals.</p> <p>9.7 I can use definite integration to find: - the area of a region bounded by a curve and lines parallel to the axes, or between a curve and a line or between two curves</p> <p>9.8 I can use integration to calculate volume of revolution about one of the axes; a volume of revolution may involve a region not bounded by the axis of rotation.</p>	<p><b>Examples of Formative Assessment to be used this term:</b></p> <p>Question worksheets</p> <p>Exercise tasks</p> <p><b>Summative assessment</b></p> <p>Assessment to take place 2 times this term.</p> <p>Week 4 Online informal quiz</p> <p>Week 9- Mock exam TBC</p> <p>Students will receive a mark for each assessment and personalised next steps for improvement</p>
Term 2	Circular Measure	<p><b>Chapter 4 : Circular Measure</b></p> <p>4.1 I can understand the definition of a radian, and use the relationship between radians and degrees</p> <p>4.2 I can use the formulae in solving problems concerning the arc length and sector area of a circle; including calculation of lengths and angles in triangles and areas of triangles</p>	
Term 2	Trigonometry	<p><b>Chapter 5 : Trigonometry</b></p> <p>5.1 I can sketch and use graphs of the sine, cosine and tangent functions (for angles of any size, and using either degrees or radians</p> <p>5.2 I can use the exact values of the sine, cosine and tangent of <math>30^\circ</math>, <math>45^\circ</math>, <math>60^\circ</math>, and related angles.</p> <p>5.3 I can use the notations <math>\sin^{-1}x</math>, <math>\cos^{-1}x</math>, <math>\tan^{-1}x</math> to denote the principal values of the inverse trigonometric relations.</p>	

		<p>5.4 I can use the trigonometric identities in proving identities, simplifying expressions and solving equations</p> <p>5.5 I can find all the solutions of simple trigonometrical equations lying in a specified interval</p>	
Term 2	Series	<p><b>Chapter 6 : Series</b></p> <p>6.1 I can use the expansion of <math>(a + b)^n</math>, where <math>n</math> is a positive integer; including the notations <math>n!</math></p> <p>6.2 I can recognise arithmetic and geometric progressions</p> <p>6.3 I can use the formulae for the <math>n</math>th term and for the sum of the first <math>n</math> terms to solve problems involving arithmetic or geometric progressions.</p>	