

# Stage 2 Mathematical Methods: Overview 2017

Teacher: Kathy Keenan

Students demonstrate their learning through six Skills and Applications Tasks (50%) and one Mathematical Investigation (20%) for the school assessment, and one three hour external exam at the end of the year (30%).

Term 1	Topics	Assessment Tasks
Week 1-4	<p><b><u>TOPIC 1: Further Differentiation and Applications</u></b></p> <p>Subtopic 1.1: Introductory Differential Calculus            Subtopic 1.2: Differentiation Rules            Subtopic 1.5: The Second Derivative</p>	<p><b>SAT 1</b>  <b>Differential Calculus Test</b>            (No calculators or notes)            70 minutes</p>
Week 5-9	<p>Subtopic 1.5: The Second Derivative (applications)            Subtopic 1.3: Exponential Functions</p> <p><b><u>TOPIC 4: Logarithmic Functions</u></b></p> <p>Subtopic 4.1: Using Logarithms for Solving Exponential Equations            Subtopic 4.2: Logarithmic Functions and their Graphs            Subtopic 4.3: Calculus of Logarithmic Functions</p> <p><b>Week 8 Begin - Mathematical Investigation (20%)</b>            Transportation Calculus</p>	<p><b>SAT 2</b>  <b>Applications of Differential Calculus Test</b>            Calculator permitted            One side of an A4 page of handwritten notes permitted.            SACE formula sheet provided.            70 minutes</p>
Week 10-11	<p>Subtopic 1.4: Trigonometric Functions</p>	<p><b>Mathematical Investigation Due</b>            Maximum of 15 single-sided A4 pages.            Mathematical Investigation report format.</p>

Term 2	Topics	Assessment Tasks
Week 1	<p>Subtopic 1.4: Trigonometric Functions (Using)</p>	<p><b>SAT 3</b>  <b>Further Differentiation Test</b>            Calculator permitted            One side of an A4 page of handwritten notes permitted.            SACE formula sheet provided.            70 minutes</p>

Week 2-6	<p><b><u>TOPIC 5: Continuous Random Variables and the Normal Distribution</u></b></p> <p>Subtopic 5.1: Continuous Random Variables  Subtopic 5.2: Normal Distributions  Subtopic 5.3: Sampling</p> <p><b><u>TOPIC 6: Sampling and Confidence Intervals</u></b></p> <p>Topic 6.1: Confidence Intervals for Population Mean</p>	<p><b>SAT 4</b></p> <p><b>Normal Distribution Test</b>  Calculator permitted  One side of an A4 page of handwritten notes permitted.  SACE formula sheet provided.  70 minutes</p>
Week 7-10	<p><b><u>TOPIC 2: Discrete Random Variables</u></b></p> <p>Subtopic 2.1: Discrete Random Variables  Subtopic 2.2: The Bernoulli Distribution  Subtopic 2.3: Repeated Bernoulli Trials and the Binomial Distribution  Subtopic 6.2: Population Proportions  Subtopic 6.3: Confidence Intervals for Population Proportions</p>	<p><b>SAT 5</b></p> <p><b>Discrete Random Variables and Proportions Test</b>  Calculator permitted  One side of an A4 page of handwritten notes permitted.  SACE formula sheet provided.  70 minutes</p>

Term 3	Topics	Assessment Tasks
Week 1 - 8	<p><b><u>TOPIC 3: Integral Calculus</u></b></p> <p>Subtopic 3.1: Anti-differentiation  Subtopic 3.2: The Area under Curves  Subtopic 3.3: Fundamental Theorem of Calculus  Subtopic 3.4: Applications of Integration</p>	<p><b>SAT 6</b></p> <p><b>Integral Calculus Test</b>  Calculator permitted  One side of an A4 page of handwritten notes permitted. SACE formula sheet provided.  70 minutes</p>
Week 9-10	Exam Revision/Time for adjustment to program due to interruptions, excursions, etc.	
Term 4 Week 1-3	<b><u>Exam Revision</u></b>	
Week 4		<p><b>External 3 hour exam on all 6 topics. Thursday 9<sup>th</sup> November 2017 1.30pm</b>  Access to electronic technology required.  Students may refer to two unfolded A4 sheet (four sides) of hand-written notes.  A formula sheet is included in the examination booklet.</p>