



<b>Subject:</b>	<b>Mathematics (MA) - Core</b>
<b>Subject Outline:</b>	This subject is designed to introduce and develop all mathematical knowledge and skills required for entry to undergraduate studies. Topics include Computation, Functions, Trigonometry, Geometry, Statistics, Probability, Algebra and Calculus.
<b>Online Subject Delivery</b>	Students in Mathematics complete blocks of learning, which consists of four interactive lessons and checkpoint tasks. These are completed on Moodle, our state-of-the-art online learning platform. Students will be supported in completing these blocks of learning by live classes and live question and answer sessions via Zoom web-conferencing. These live online classes are student-focused and communicative with learners being expected to contribute to group discussion. Teachers monitor student's progress and provide individualised feedback on checkpoint tasks. Students access the Maths forum regularly to post questions and review discussions.
<b>Face to Face Subject Delivery</b>	Students in Maths participate in a blended learning approach that includes class time supported by activities online via Moodle. Classes are student-focused and communicative with learners being expected to contribute to group discussion. Participation in online learning before class prepares students for in-class activities and maximises the value of face to face learning. Students can prepare for class, review content and skills learned as well as complete checkpoints online.
<b>Graduate Attributes (GA):</b>	On completion of the Foundation Program, students will be able to: <ol style="list-style-type: none"> <li>1. Communicate effectively in English in a variety of contexts, circumstances and modes</li> <li>2. Demonstrate relevant, practical and theoretical knowledge in a subject area</li> <li>3. Apply relevant academic literacy skills in a subject area</li> <li>4. Apply relevant numeric literacy skills in a subject area</li> <li>5. Apply critical, analytical thinking, and problem-solving skills for academic contexts</li> <li>6. Work independently and collaboratively in a cross-cultural context</li> <li>7. Demonstrate academic integrity</li> </ol>
<b>Objectives:</b>	On successful completion of this subject, students will be able to: <ol style="list-style-type: none"> <li>1. Apply mathematical concepts to solve mathematical problems (GA 2, 4, 5);</li> <li>2. Apply mathematical concepts to real life/simulated situations (GA 2, 4, 5);</li> <li>3. Draw and interpret graphs of mathematical functions (GA 2, 4, 5);</li> <li>4. Apply mathematical concepts to solve a practical problem/s in a team situation (GA 2, 4, 5, 6);</li> <li>5. Deliver a presentation to a group, identifying and evaluating a mathematics problem (GA 1, 4, 5, 6).</li> </ol>
<b>Content:</b>	<ul style="list-style-type: none"> <li>● Arithmetic and geometric sequences and series</li> <li>● Logarithms</li> <li>● Linear equations, inequalities and linear programming</li> <li>● Graphs</li> <li>● Quadratic functions and equations</li> <li>● Binomial theorem</li> <li>● Geometry</li> <li>● Rates of Change</li> <li>● Differential calculus</li> <li>● Integral calculus</li> <li>● Probability</li> <li>● Statistics</li> </ul>

<b>Attendance</b>	<p>Attendance is a visa requirement. Attendance contributes directly to the academic success of the student. Attendance is monitored as described in the Attendance Policy.</p> <ul style="list-style-type: none"> <li>• Face to face: Students are expected to attend all classes and complete all Moodle checkpoints.</li> <li>• Online: Students are expected to attend all live online classes and complete all Moodle checkpoints. Engagement with question and answer sessions and Moodle lessons is highly recommended.</li> </ul>
<b>Learning Resources</b>	<ul style="list-style-type: none"> <li>• IES Subject Moodle site</li> <li>• UQ-approved calculator (see the Moodle site for details)</li> <li>• MathsOnline (<a href="http://www.mathsonline.com.au">www.mathsonline.com.au</a>) (Optional)</li> </ul>

**Students in the Standard Program are assessed through the following assessment activities:**

Assessment Activity	Description	Weighting
<b>TERM 1</b>		
<b>Online Quiz</b>	Students will sit an online quiz (up to 2 hours in length) which covers all topics covered in the first term of the course.	10%
<b>TERM 2</b>		
<b>Project</b>	Students are required to conduct a research project involving statistics.	25%
<b>TERM 3</b>		
<b>Seminar</b>	Students are required to present a brief seminar which involves presenting a mathematical problem or topic of interest to the class. Students are also expected to ask questions of their peers during the presentation of the seminars.	25%
<b>TERM 4</b>		
<b>Self-Assessment Tests (SATs)</b>	The SATs are online homework tasks set throughout the course that are based on weekly curriculum topics. Students are required to complete each week's SAT at the end of the designated week.	15%
<b>Final Exam</b>	Students will sit an exam (up to 2 hours in length) which covers content from Term 4.	25%