

<b>Module Title:</b>	<b>Maths 4</b>
<b>Academic year:</b>	2009 – 2010
<b>Credit Value:</b>	3 –Mandatory
<b>Pre- requisites:</b>	Maths 1, 2, 3
<b>Assessment:</b>	70% Final Exam, 30% Continuous Assessment (C.A.)
<b>Aims</b>	This subject aims to build up the student's ability to use calculus and in particular to introduce more advanced techniques of integration. The subject also introduces the basic concepts of differential equations and uses the techniques of calculus and Laplace Transforms to solve first order differential equations. Convergence of sequences and series are introduced. The calculus is used again to develop the Maclaurin Series for a function. The area of Matrices is examined in relation to simultaneous equations and Gaussian elimination.
<b>Module Content</b>	<ul style="list-style-type: none"> <li>• Techniques of Integration</li> <li>• Laplace Transforms</li> <li>• Matrices</li> <li>• Sequences and Series</li> </ul>
<b>Intended Learning Outcomes:</b>	<p><b>On successful completion of the module the student will be expected to be able to:</b></p> <ol style="list-style-type: none"> <li>1. Calculate integrals using a range of integration techniques.</li> <li>2. Calculate and invert Laplace transforms for standard functions</li> <li>3. Classify differential equations. Identify dependent variable.</li> <li>4. Solve simple differential equations associated with circuits using Laplace transforms.</li> <li>5. Interpret and manipulate matrix expressions and use matrices for the solution of linear equations.</li> <li>6. Calculate limits, sum geometric series and test series for convergence.</li> </ol>