School of Mathematics

Course 123 - Mathematical Methods course for JF Natural Sciences. (JF Natural Sciences) 2002-2003

Lecturer: A. Dougall

Requirements/prerequisites: None

Duration: 24 weeks

Number of lectures per week: 2 + 1 examples class

Assessment: See below

End-of-year Examination: See below

Michaelmas term
Simulateous equations, binomial expansions, polynomials, functions, rational functions, partial fractions, limits, differentiation.

Hilary Term
Applications of differentiation (maxima and minima, linear approximation, Newton’s method), indefinite and definite integrals, logarithmic and exponential functions, applications of integration to areas, volumes, arc lengths.

Trinity Term
Differential equations (first order, linear with constant coefficients, systems of first order equations), numerical methods, matrices and determinants, curve fitting.

Assessment:

Grading:

1. There will be a multiple-choice examination at the end of each of the aforementioned terms. Each of these exams will count 10% of your final mark for these two terms. The final examination will count 80% of your final mark for these two terms.

2. Science students will attend all three terms of this course. There will be a multiple-choice examination at the end of each term. Each of these three exams will count 10% of your final mark.

There will be a computer project during Hilary term that will count 10% of your final mark. So this is how the final mark for Course 123 is calculated:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Michaelmas exam</td>
<td>10%</td>
</tr>
<tr>
<td>Hilary exam</td>
<td>10%</td>
</tr>
<tr>
<td>Trinity exam</td>
<td>10%</td>
</tr>
<tr>
<td>Computer project</td>
<td>10%</td>
</tr>
<tr>
<td>Final exam</td>
<td>60%</td>
</tr>
</tbody>
</table>

March 24, 2003