UNIT OUTLINE

Read all of this notice now, AND keep it handy, so you can continue to refer to it throughout the semester.

1. Prerequisites
Calculus B (MATH1040) is a first semester unit in Calculus, designed for students who have passed TEE Applicable Mathematics (ie a scaled mark of at least 50%), but have not passed TEE Calculus. However, if you have passed TEE Calculus with a mark between 50 and 54, then you are permitted to enrol in Calculus B if you wish. If you have questions about these requirements, please see a first-year Mathematics and Statistics adviser as soon as possible.

Details about all first-year Mathematics and Statistics units, as well as relevant information concerning the School, can be found in the 2009 Information Guide for First Year Students. You can access a pdf version of this guide from the Maths homepage via the For Students link Undergraduate.

2. Studying for this unit
In the 2009 Information Guide for First Year Students there is a good discussion of the various activities in our first year units, ways in which university study differs from school work, expectations of the amount of extra work you may need to do beyond the scheduled classes, and your responsibilities. These comments are very relevant to Calculus B and deserve your careful attention.

3. Expected outcomes
A student having successfully completed Calculus B should

- have increased algebraic and numeracy skills,
- better appreciate the role of calculus in describing the relationship between a quantity and its rate of change,
- reach a level comparable with TEE Calculus.

4. Textbook
5. Teaching arrangements

The thirteen teaching weeks of the semester are labelled Week 1 to Week 13. This semester, there is a one week non-teaching Study Break between Week 7 and Week 8. Calculus B is timetabled in two streams, with the same lecturer for each stream. You will normally attend one stream.

Your Calculus B lecturer and co-ordinator is:

- Dr Kathleen Chindarsi, Room 1.20 (first floor) Mathematics Building. (email: kathleen@maths.uwa.edu.au)

You are always welcome to approach her with any questions or comments about Calculus B.

There are four lectures per week (in each stream), although some of the lecture times will be used for tests. There are also three weekly computer lab sessions timetabled. You can attend any or all of these sessions, which offer use of a computer, and help, for Calculus B students. You may prefer to complete your computer work at home, but help is available only at these sessions. (We do not recommend leaving requests for help until the end of the week.)

Scheduled times and venues are shown here in the table:

<table>
<thead>
<tr>
<th>Classes</th>
<th>8am stream</th>
<th>9am stream</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>Mon 8am ROSS LT</td>
<td>Mon 9am BLAKERS LT</td>
</tr>
<tr>
<td>Lecture</td>
<td>Tue 8am ROSS LT</td>
<td>Tue 9am BLAKERS LT</td>
</tr>
<tr>
<td>Lecture</td>
<td>Wed 8am ROSS LT</td>
<td>Wed 9am BLAKERS LT</td>
</tr>
<tr>
<td>Lecture</td>
<td>Thu 8am ROSS LT</td>
<td>Thu 9am BLAKERS LT</td>
</tr>
<tr>
<td>Computer lab</td>
<td>Tue 12pm MCL</td>
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<tr>
<td>help sessions</td>
<td>Wed 11am MCL</td>
<td></td>
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<tr>
<td>(optional)</td>
<td>Thu 11am MCL</td>
<td></td>
</tr>
</tbody>
</table>

Ross Lecture Theatre, Physics Building.
Blakers Lecture Theatre, Mathematics Building.
Mathematics Computing Laboratory, Mathematics Building.

Note that the only public holidays observed by UWA this year during Semester 1 are Good Friday (Friday 10 April), Easter Monday (Monday 13 April) and Anzac Day (Monday 27 April). Note that Calculus B classes will also be cancelled on the morning of Wednesday 1 April (Prosh).

6. Calculators

All units in the School of Mathematics and Statistics, including MATH1040, comply with the Faculty of Engineering, Computing and Mathematics policy that only calculators bearing an APPROVAL STICKER will be permitted in tests and exam. (Programmable calculators and graphics calculators are not eligible for approval.)
7. Other resources and assistance

- **Handouts:** All Week 1 handouts will be distributed in lectures. Spare copies may be available later, for a limited time, from the Calculus B [MATH1040] shelves near Maths&Stats Reception (on the first floor of the Mathematics Building).

- **Email:** We can, and may, send email to an enrolment-generated Calculus B address list, but you can only receive such email if you have **activated your Pheme account.** Please do this soon so that you can receive such emails.

- **Web-site:** The address for the **Calculus B webpage** is


  where there are further useful links. (This webpage is also accessible from the Maths homepage http://www.maths.uwa.edu.au, via the link Units.)

- **Library and other resources:** Seven copies of the textbook are on Closed Reserve in the Undergraduate Physical Sciences Library (UPSL) in the Engineering Building. Ask the librarian.

  The following books may be useful supplements to the textbook:
  4. *Creelman’s TEE Questions: Calculus* by A. Creelman, ed (2008), Creelman Trading Pty Ltd.

* These books are available in the UWA library.

** One copy of this book is on Closed Reserve in UPSL.

You will find many other Calculus books at first-year level in UPSL.

- **Help with problems:** The Maths Learning Centre (MLC) (in Room G.01, ground floor, Mathematics Building) is available for help with problems from Monday 2 March (Week 2) to Friday 5 June (one week after the end of semester). (See the 2009 Information Guide for First Year Students for more details, such as opening times.)

If you are having any difficulties at all with your studies, please **do seek help as soon as possible.** Often, the first approach you make may be to your lecturer or computer lab demonstrator. A convenient time for initial contact may be at the end of a lecture, or during a lab class.
8. Assessment

In 2008, Calculus B will be assessed as follows:

- 10% for CalMaeth assignments,
- 30% for three Written Tests (ie 10% each),
- 60% for the Final Exam.

CalMaeth gives you regular deadlines throughout the semester – for more information about CalMaeth, see the separate handout Introduction to CalMaeth. The Written Tests will be held during your allocated lecture hours (see the Lecture Schedule). The Final Exam (3 hours) will be held during the Semester 1 exam period in June. (The exam timetable will be published by the Examinations Office later in the semester.)

Absences from tests or the exam, and late CalMaeth assignments, all score a zero mark, unless you present documented justification to your Faculty Student Advisor. Please also inform the co-ordinator after seeing your Sub-Dean.

You should be familiar with the faculty policies on

- academic dishonesty (see http://www.ecm.uwa.edu.au/studentnet/dishonesty)
- exams and appeals (see http://www.ecm.uwa.edu.au/studentnet/exams)

Note that supplementary exams will not be granted in this unit (unless the student is within one unit of completion if their degree and provided their mark is between 45% and 49% inclusive and also provided the student is currently enrolled in the unit, that is, only for units taken in the student's final semester).

9. Students rights and responsibilities

You should be familiar with this University’s Charter of Student Rights and Responsibilities (see http://www.secretariat.uwa.edu.au/home/policies/charter).

10. Academic Conduct Essentials (ACE)

All students who have not previously been enrolled at UWA are required to complete a short compulsory online module called Academic Conduct Essentials (ACE) within the first 10 weeks of semester. ACE introduces students to essential knowledge regarding ethical scholarship, helps prepare them for the expectations of their university career and informs them of correct academic conduct.

The unit can be accessed via WebCT (http://webct6.uwa.edu.au). The final unit quiz must be completed with a mark of 80% or greater. Students may attempt the quiz as many times as they wish to gain the required pass mark. Completion of the unit will be recorded as an Ungraded Pass (UP) on students’ academic records. Non-completion (NC) within the required timeframe will also be documented on formal academic records. More information on ACE is available at http://ace.uwa.edu.au.

Kathleen Chindarsi (coordinator),
23 February 2009.
<table>
<thead>
<tr>
<th>Monday</th>
<th>Wk</th>
<th>Topic</th>
<th>Other comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 Feb</td>
<td>1</td>
<td>Real numbers, Absolute value, Equations, and Inequalities (Chp.1*) Functions and Graphs (Chp.4) Trigonometric functions (not in textbook)</td>
<td>First CalMaeth assignment due Fri 6 March.</td>
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<tr>
<td>2 Mar</td>
<td>2</td>
<td>Continuity and Limits (Chp.5) Differentiation (Chp.6 p130–131, Chp.3 p36–45)</td>
<td>Register as an MCL user in a computer lab session.</td>
</tr>
<tr>
<td>9 Mar</td>
<td>3</td>
<td>Applications of derivatives (Chp.3 p36–37 and p48–58, Chp.4 p88, Chp.7 p141–144 and p150–158)</td>
<td>NOTE: Week 3 CalMaeth (due Fri 20 March ) is relevant for Test 1.</td>
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<tr>
<td>16 Mar</td>
<td>4</td>
<td>Applications of derivatives – continued</td>
<td>TEST 1 Thu 19 March</td>
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<tr>
<td>23 Mar</td>
<td>5</td>
<td>Derivatives of trigonometric functions and some applications (Chp.6 p126–127) Differentiation of implicit functions (Chp.6 p133–135)</td>
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<tr>
<td>30 Mar</td>
<td>6</td>
<td>Complex numbers (Chp.2 p22–31, Chp.8 p161–178)</td>
<td>No lecture Wed 1 April (Prosh).** NOTE: Week 6 CalMaeth (due Fri 10 April) is relevant for Test 2.</td>
</tr>
<tr>
<td>6 Apr</td>
<td>7</td>
<td>Complex numbers – continued</td>
<td>TEST 2 Thu 9 April.</td>
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<td>13 Apr</td>
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<td>STUDY BREAK (one week)</td>
<td>No classes this week.</td>
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<tr>
<td>20 Apr</td>
<td>8</td>
<td>Complex numbers – continued Exponential and Logarithmic functions and their derivatives (Chp.11 p236–249)</td>
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<tr>
<td>27 Apr</td>
<td>9</td>
<td>Exponential and Logarithmic functions and their derivatives – continued Integration – Definite and Indefinite Integrals (Chp.9)</td>
<td>NOTE: Week 9 CalMaeth (due Fri 8 May) is relevant for Test 3.</td>
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<tr>
<td>4 May</td>
<td>10</td>
<td>Integration – continued Applications of integration (Chp.10)</td>
<td>TEST 3 Thu 7 May.</td>
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<tr>
<td>11 May</td>
<td>11</td>
<td>Applications of integration – continued (Chp.9 p198–199, Chp.10 p211–219, Chp.11 p255–258)</td>
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<tr>
<td>18 May</td>
<td>12</td>
<td>Applications of integration – continued Vector calculus (Chp.12)</td>
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<tr>
<td>25 May</td>
<td>13</td>
<td>Vector calculus – continued Revision</td>
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* Chapter and page references to the textbook: *Calculus*, Sadler, AJ.
** No UWA classes in the morning on Prosh Day Wed 1 April (student charity collection)

Note that the Semester 1 Exam Period begins Saturday 6 June 2009.