

THE UNIVERSITY OF SYDNEY  
Semester 1, 2009

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Information Sheet for **MATH1111 Introduction to Calculus**

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### Web Site

It is important that you check the Junior Mathematics web site regularly.

It may be found by following links from the University of Sydney front page, or from WebCT, or by going directly to

<http://www.maths.usyd.edu.au/u/UG/JM/>

Important announcements relating to Junior Mathematics are posted on the site, and there is a link to the MATH1111 page. On the MATH1111 page you will find on-line resources and other useful links. Announcements regarding assessment tasks will be made on this page at various times throughout the semester. Make sure you check the page weekly.

### Lectures

Times	Location	Lecturer	Lunchtime Consultation
1 pm Tues 2pm Wed & Thurs	Carslaw 273	Dr C. Cresswell Carslaw room 711	Wednesdays, 1-2pm

Lectures run for 13 weeks, and the last lecture will be on Thursday 4 June.

### Tutorials

Tutorials start in week 2. You should attend two tutorials per week, as shown on your personal timetable. Attendance at tutorials is essential as your participation in the tutorials will contribute to your assessment. You must attend the tutorial given on your personal timetable, since your participation cannot be recorded in a tutorial in which you are not enrolled.

### Tutorial sheets

The tutorial exercise sheets will be available from the MATH1111 website. Tutorial sheet  $n$  consists of questions to be worked on during the Thursday or Friday tutorial in week  $n$  and the Monday or Tuesday tutorial in week  $n + 1$ . **You must print out and take the appropriate tutorial exercise sheet to each of your tutorials.** You will also need to take the textbook to each of your tutorials, since many of the tutorial exercises are in the textbook.

Solutions to tutorial  $n$  exercises will usually be posted on the web by Tuesday of week  $n + 1$ .

## Assessment

Your final raw mark for this unit will be calculated as follows:

- 60%: Exam at end of semester 1.
- 30%: Quiz mark.
- 5%: Assignment mark.
- 5%: Tutorial participation mark.

Your final raw mark is then scaled to produce your final mark. Marks are scaled so that the distribution of grades is consistent with the quality of the class, and the difficulty of the unit, as required by the University.

## Examination

There is one examination of 2 hours duration during the examination period at the end of semester 1. Further information about the exam will be made available at a later date.

## Assignments

One assignment will be marked, and will be worth 5% your final raw mark. The assignment will be due on **Thursday 2 April**. Please see page 26 of the Junior Mathematics Handbook for details relating to the submission of assignments.

Another set of assignment questions will be made available, but these will not be marked, and will not count towards your final mark. Solutions and a marking scheme will be provided, and you are encouraged to mark the questions yourself, or ask a friend to mark it for you (using the marking scheme provided). This will provide you with valuable feedback on how you are handling the material, and help you prepare for the exam.

## Quizzes

Two quizzes will be held during tutorials on **Monday 27 April or Tuesday 28 April** and **Thursday 28 May or Friday 29 May**. Each quiz is worth 15% of your final raw mark. You must sit for the quiz during the tutorial in which you are enrolled. Your quiz mark will not be recorded if you sit for the quiz in a tutorial in which you are not enrolled.

## Tutorial participation mark

Rolls will be kept in tutorials, and you will receive 0.25 marks for each tutorial (up to a maximum of 5 marks) for participation (that is, *working*, not just attending). Your tutor will award the mark when he or she is satisfied that you have participated appropriately. In some tutorials you may be asked to hand in some work.

## Text book

Hughes-Hallett et al. *Calculus: Single and Multivariable*. 4th edition, Wiley, 2005.  
Available from the Co-op Bookshop.

## Where to go for help

For administrative matters, go to the **Student Office, Carslaw room 520**.

For help with mathematics, go to the Mathematics Learning Centre (Carslaw level 4) or see the lecturer. The lecturer guarantees to be available during her indicated consultation hour, but may well be available at other times as well.

### Proposed week-by-week outline

Week	Topics	Text reference
1	Assumed Knowledge Overview Functions Functions	 1.1 1.1
2	The Exponential Function The Logarithmic Function Trigonometric Functions	 1.2 1.4 1.5
3	Trigonometric Functions Polynomials Rational Functions	 1.5 1.6 1.6
4	Measuring Speed & The Derivative at a Point The Derivative Function & Interpretations of the Derivative The Second Derivative	 2.1, 2.2 2.3, 2.4 2.5
5	Differentiating Powers and Polynomials Differentiating the Exponential Function Product and Quotient Rules	 3.1 3.2 3.3
6	The Chain Rule The Chain Rule Differentiating Logarithmic Functions	 3.4 3.4 3.6
7	Differentiating Trigonometric Functions Using the First and Second Derivatives Using the First and Second Derivatives	 3.5 4.1 4.1
8	Applications: Optimization Applications: Modelling Parametric Equations	 4.3 4.5 4.8
9	The Definite Integral Anti-differentiation (graphically & numerically) Anti-differentiation (analytically)	 5.2 6.1 6.2
10	Integration by Substitution Functions of Two Variables Graphs of Functions of Two Variables	 7.1 12.1 12.2
11	Contour Diagrams Linear Functions Surfaces	 12.3 12.4 12.5
12	The Partial Derivative Local Linearity The Differential	 14.1, 14.2 14.3 14.3
13	Revision	