

UNIVERSITY OF WAIKATO
Department of Mathematics (SCMS)

MATH101-08A - Introduction to Calculus - 2008

Lecturer

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Lectures

Tuesday	1.10pm - 2.00pm	S1.02
Thursday	3.10pm - 4.00pm	LG.05
Friday	12.00noon - 12.50pm	LG.05

Aim of paper

To give students in mathematics, or in subjects that use mathematical methods, a comprehensive foundation in differential and integral calculus and examples of its applications.

Textbook

Thomas' Calculus (11th Edition), by Finney, Weir, Giordano, published by Addison-Wesley.

Recommended Reading

Calculus Made Easy, S. Thompson & M. Gardiner, MacMillan.

Paper contents

Depending on the time available, topics will be drawn from the following syllabus:

1. *Functions, limits and continuity; the derivative and its geometrical meaning; rules for differentiation,*
2. *The chain rule; Rolle's theorem and the Mean Value Theorem; maxima and minima; applications of differentiation: linear approximation, Taylor's Theorem, higher derivatives, curve sketching, modelling problems involving rates of change.*
3. *The integral as an area; fundamental theorem of calculus; techniques of integration including substitution and integration by parts, partial fractions; Riemann sums; applications of integration: volumes, arclength and surface area.*
4. *The logarithm, exponential and hyperbolic functions; inverse functions; differentiation of special functions.*

Tutorials

Learning mathematics requires practice at solving problems. In this paper, participation in tutorials is an integral part of the paper and is crucial to gaining experience in problem solving. There will be **weekly one-hour tutorials** beginning **Monday 3 March (SECOND WEEK of teaching)**. Blank tutorial lists will be displayed in the first week of semester or earlier on the MATH101A & B noticeboard on the third floor of G Block in the **foyer area beside the lift**. Please choose **ONE** tutorial scheduled at a free hour of your timetable, and write your **name and ID clearly** on the list.

Assessment for the tutorials will occur on a week-by-week basis, and will take the form of a written assignment.

Your best 8 (out of 10) weekly marks will contribute equally to your tutorial mark.

Lecture Notes

These will be available on the class website, normally on the morning before each lecture.

Class website:

<http://www.math.waikato.ac.nz/~kab>

Assessment

Your final mark will be based on both internal assessment (*c*) and the final examination (*f*) with a *c:f* weighting of either 1/2:1/2 or 0:1, whichever works to your advantage. The internal assessment mark will consist of **TWO TESTS**:

Wednesday	2 April	7-9pm	PWC (MSB1.04)
Wednesday	28 May	7-9pm	PWC (MSB1.04)

and **ONE tutorial component** (as outlined above). The internal assessment mark *c* will be calculated with each test counting 40% and the remaining 20% from tutorials.

An unrestricted pass (ie. C or better) will not normally be awarded if the final examination mark is below a D grade (40%).

Important notes about assessment

If you miss a test because of illness, you must supply a **Medical Certificate (MC)** (signed by a **Doctor NOT a Practice Nurse**) to the Mathematics Secretary (G3.19); *without such a certificate you will not obtain any credit for the test from which you were absent*. If you supply a MC (or other good excuse) in lieu of one test, then the other test will count for 80% of your internal assessment mark. If you supply MCs for both tests, the exam mark will replace both test marks. If you have any doubts about the operation of these procedures, contact the paper coordinator.

Please note: no credit will be given for missed tutorials without a MC. With a MC you may gain permission to **catch-up** on missed assignment *at the discretion of the tutor*.

The date, time and location of the Final Examination at the end of the semester will be arranged by the University registry.

Math Help sessions

In addition to the tutorials, the Department will provide **FREE Math Help** sessions for all Level I & II **Mathematics** papers. These begin on **Monday 3 March – (SECOND WEEK of teaching)** scheduled daily from **1-2pm** (see noticeboard for further details). **Math Help** sessions provide an excellent opportunity for students to discuss difficulties with lectures and assignments.

Noticeboard, paper handouts and return of assessed work

All notices will be posted on a noticeboard situated on the 3rd Floor of G Block in the foyer area near the lift.

This noticeboard should be consulted frequently as such notices are deemed to be official notifications.

Computer printouts of your internal assessment marks will also be displayed on this noticeboard.

It is YOUR RESPONSIBILITY to check your marks are correctly entered on the noticeboard.

Tests will be returned via the **SCHOOL OFFICE (GG.19)** on the **GROUND FLOOR** of **G Block** and should be collected by **yourself within two weeks**. Tutorial work will be returned during the next tutorial session or in pigeon holes near 3rd floor lift and first year noticeboards.

Mathematics Subject Forum

The Mathematics Subject Forum, which consists of staff and student representatives, meets about twice each semester. It serves as an informal forum for discussion of matters concerning the subject of Mathematics in the University. The student representatives on the Committee also elect, from among themselves, one representative on each of the School Boards of Study.

Elections of two representatives from each undergraduate paper will be held in late March. The lecturers in charge will be responsible for the conduct of elections in their classes, and will act as returning officers.

Other information – please refer to website: <http://www.math.waikato.ac.nz/studentinfo.html>

The resource fee for this paper covers the costs of photocopied handouts.

Your attention is drawn to the following policies and regulations contained in the 2008 University Calendar.

- Assessment Regulations 2006 (pg 122)
- Student Discipline Regulations 2007 (pg 750)
- Computer Systems Regulations 2006 (pg 769)
- Policy on the Use of Māori for Assessment (pg 130)
- Human Research Ethics Regulations 2005 (pg 109)
- Student Research Regulations 2001 (pg 107)
- Student Complaints Policy 2004 (pg 765)