

UNIVERSITY OF WAIKATO
Department of Mathematics (FCMS)

MATH101-10B *Introduction to Calculus*

LECTURER

Professor Kevin Broughan

Rm G3.22

Ph: 838-4423

Email: kab

Office Hours

Thursday: 3.10 - 5.00pm in G3.22 during teaching weeks.

Website

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

LECTURES

Wednesday	2.10pm	-	3.00pm	ELT.G.01
Thursday	2.10pm	-	3.00pm	L.G.03
Friday	12.00noon	-	12.50pm	L.G.02

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

Schaum's Outlines '*Calculus*' (5th Edn) Ayres & Mendelson, McGraw-Hill. (Soft cover). Frequent reference will be made to this text on the class website.

PAPER CONTENTS

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

Functions, limits and continuity; the derivative and its geometrical meaning; rules for differentiation, The chain rule; Rolle's theorem and the Mean Value Theorem; maxima and minima; applications of differentiation including linear approximation, Taylor's Theorem, higher derivatives, curve sketching, modelling problems involving rates of change.

The integral as an area; fundamental theorem of calculus; techniques of integration including substitution and integration by parts, partial fractions; applications of integration including volumes, arclength and surface area.

Calculus of trigonometric functions, the logarithm, exponential and hyperbolic functions; inverse 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 19 July (SECOND WEEK of teaching)**.

Blank tutorial sign-up sheets will be displayed in the first week of semester or earlier on the **MATH101 noticeboard** on the **third floor of G Block** in the **foyer next to the lift**.

Please choose **ONE** tutorial only, and write your **Name and ID no. clearly** on the sheet which best suits you.

***You must be OFFICIALLY SIGNED into the tutorial you wish to attend or you will be REFUSED ENTRY.**

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

Your BEST 8 (out of 10) weekly assignment marks will contribute towards 20% your internal mark.

LECTURE NOTES, READINGS and EXERCISES

These will be available on the class website.

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 or 0:1, whichever works to your advantage.

The internal assessment mark will consist of **TWO Tests** held as follows:

Thursday	12 August	7.00 - 9.00pm	MSB.1.04 (PWC)	(40%)
Thursday	7 October	7.00 - 9.00pm	MSB.1.04 (PWC)	(40%)

plus a **tutorial component worth 20%** of the internal mark.

Students have **six weeks from 12 July to determine if they wish to change down to a less difficult Mathematics paper without any fees loss.

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.**

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 but *at the tutor's discretion.*

An unrestricted pass (ie. C or better) will be awarded only to students who achieve both a **final mark of at least 50%** AND an **examination mark of at least 40%**.

The date, time and location of the Final Examination will be arranged by Examinations Office (SASD).

MATH HELP SESSIONS

In addition to the tutorials, the Department will provide **FREE Math Help** sessions for all Level I & II **Mathematics** papers **DAILY** from **1-2pm** in **G.B.13** from **Monday 19 July (SECOND WEEK of teaching)** to **Friday 15 October inclusive**.

These sessions provide an excellent opportunity for students to discuss difficulties with lectures and assignment problems.

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 printout.

TEST scripts are to be collected from the **SCHOOL OFFICE (GG.19)** on the **GROUND FLOOR** of **G Block**.

TUTORIAL assignments will be handed back at the following week's tutorial session - any **uncollected work** after that session will be placed in the **pigeon holes next to 3rd floor lift** - beside the 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 July. The lecturers in charge will be responsible for the conduct of elections in their classes, and will act as returning officers.

Your attention is drawn to the following policies and regulations contained in the **2010** University Calendar

- Assessment Regulations 2005 (pg 119)
- Student Discipline Regulations 2008 (pg 697)
- Computer Systems Regulations 2005 (pg 715)
- Policy on the Use of Maori for Assessment (pg 126)
- Ethical Conduct in Human Research and Related Activities Regs 2008 (pg105)
- Student Research Regulations 2008 (pg 103)
- Student Complaints Policy (pg 712)

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