



Tutoring in Mathematics Study Guide

Semester One 2011

MATHS 202
(15 Credits)

COURSE DESCRIPTION

This course provides students with practical experience in the teaching of mathematics, as well as giving an introduction to the theory and issues of mathematics education. The course is limited to a maximum enrolment of twenty places each year.

Pre-requisites: The course is intended for students who have studied mathematics at university and gained at least 30 credits with good grades in this subject.

Selection: Students are selected for the course on the basis of their academic record, and the results of a personal interview with the lecturer to determine their interest in the course and their communication skills.

AIMS

A student who successfully completes this course will:

- consolidate their own understanding of basic mathematical concepts and techniques;
- gain theoretical and practical knowledge about both the learning and teaching of mathematics;
- gain personal satisfaction from using their own knowledge to help other students;
- gain sufficient experience to assess their own attitudes to, and suitability for, teaching as a career without having to make a major commitment in that direction;
- gain skills transferable to tutoring in other courses within the department.

LECTURER

Greg Oates Room 322 Science Centre
 Phone 923 8605
 g.oates@auckland.ac.nz
 Office Hours: Mon, Tues, Wed 12-2pm.

ASSESSMENT

Your final grade will be based on 100% coursework.

Total coursework mark	100%
Practical (tutoring, marking, administration, attendance, reliability, contribution to discussions)	35%
Personal Journal (on Cecil)	25%
Seminar	25%
Assignment	15%

Seminar

Students work together in pairs. The seminar investigates a general aspect of mathematics education.

Seminars will be held after the mid-semester break.

Assignment

Your assignment will be in two parts.

<i>Due Dates (by 4pm)</i>	Part 1	Monday 9 May
	Part 2	Monday 30 May

Journal

This will be maintained weekly/fortnightly throughout the semester. It will be conducted on Cecil.

EXPECTATIONS

Pre-requisite Knowledge

Students taking this course are expected to have a working knowledge of Year 13 Mathematics.

Course-load

Semester courses at The University of Auckland are assumed to require 10 hours per week of student time. In MATHS 202, the normal pattern of student study is expected to be :

- 3 hours lectures
- 1 hour tutorial
- 1 hour journal writing
- 2 hours assignments (Maths 102)
- 2 hours reading/seminar preparation
- 1 hour administration.

Students are expected to attend and come prepared to all classes. An attendance component is built into the practical assessment

LECTURES AND TUTORIALS

Lectures in this course are working times, they require you to think, not just sit passively and listen! Students should come prepared to ask questions, have discussions in groups, do mathematical problems or explore mathematical questions. This means students will need paper, graph paper, calculators (see later), an open mind, and a sense of humour. There are three teaching sessions a week, on Mondays, Tuesdays and Wednesdays. The lectures will have a focus of:

- Monday: aspects of mathematics education, leading to presentation of seminars;
- Tuesday: marking issues with respect to the Maths 102 assignments: journal entries;
- Wednesday: preparation for the practical aspects of Maths 102 tutoring: administration.

Lectures	Monday	11-12am	G10, Commerce A
	Tuesday	11-12am	201E-301
	Wednesday	11-12am	301-248

Tutorials for the Maths 102 students take place on Thursdays and Fridays. Maths 202 students will be assigned to one of the tutorial groups, and will tutor under the guidance of a supervisor. The times will be allocated after consultation. Possible tutorial times are still to be finalised. The tutorials promote discussion as an important component in the process of mathematics learning. Being able to communicate understanding is an important aspect of mathematical knowledge. In the Maths 102 course, students will be given an opportunity to develop these skills. The tutorials are of two types:

- (a) Help with written assignment questions;

Maths 202 students mark the written assignments for the same group of students that they tutor. Marking work is paid at the standard hourly rate for a set number of hours.

- (b) Collaborative group tasks. These are tutorial activities in which a group of students (usually three) attempt to solve a mathematics problem together. The solution is submitted as a joint effort and all three students will gain the same mark. Maths 202 students will give the joint solution two marks:

- (i) An oral mark in which tutors will assess the extent of the collaboration of the group members in the problem solving process and the understanding that the whole group has of the problem and its solution.
- (ii) A written mark in which the group's written solution will be marked in the usual way according to a mark scheme.

CECIL

Cecil is the one of the sources of information about this course, and announcements will be made there. For Maths 102, CECIL is the main source of information and you will have access to the 102 site also. In particular you should visit the MATHS 102 Cecil site early in the course to see what is available there, and log on regularly to keep up to date with the progress of the Maths 102 course. You can access Cecil via the university website, <http://www.cecil.auckland.ac.nz>.

TEXT

The required text for this course is the Maths 102 supplementary course notes booklet 'Functioning in Mathematics' (2009, 2010 or 2011 edition), available from UBS.

A reading list and discussion papers on issues related to mathematics education will be provided as required during the semester.

WORKING TOGETHER & CHEATING

The University of Auckland will not tolerate cheating, or assisting others to cheat, and views cheating in coursework as a serious academic offence. The work that a student submits for grading must be the student's own work, reflecting his or her learning. You are encouraged to discuss problems with one another and to work together, but you must not copy another person's assignment.

If you are in any doubt about the permissible degree of collaboration, then please discuss it with a staff member. For complete information about the university's policy on cheating, see *Guidelines: Conduct of Coursework* on the university website.

TECHNOLOGY

Calculators

Students should be familiar with use of both scientific and graphics calculators.

Graphics and/or CAS-calculators will be used by some lecturers in their teaching of Maths 102, and are supported by supplementary material located on Cecil. Maths 102 students can use such calculators in all assignments, the test, and the examination. Any model graphics or CAS-calculator may be used (e.g. Casio, TI, Sharp) but students buying one for the first time are recommended to purchase the model TI 89 which has many algebraic and statistical functions

Computers

The mathematics department is progressively introducing the use of Matlab in all its courses. However, in Semester One 2011, MATHS 102 will use the graphing package *AUTOGRAPH* instead. It is available on the computers in the Mathematics Undergraduate Computer Laboratory.

DELNA

DELNA is The University of Auckland's English Language testing programme. Information on the programme can be found at: <http://www.delna.auckland.ac.nz/>

Attributes of DELNA:

- Diagnoses your academic English language ability.
- Does not cost you anything.
- Directs you to the best language support for you.
- Does not exclude you from the courses you are enrolled in.
- Does not appear on your academic record.

ENGLISH LANGUAGE ASSISTANCE

If students require assistance with English there are several services provided by the university and by the Department of Mathematics. The main assistance is ELSAC – the English Language Assistance Centre at Web site <http://www.elsac.auckland.ac.nz/> This computer-laboratory based service is free and open 7 days a week. Tutors are available to help.

GETTING FURTHER HELP

For assistance with the material covered in the course:

- Ask questions in class.
- Visit the lecturer during office hours.
- Other mutually convenient times can be arranged by talking or emailing the lecturer.

HARASSMENT & COMPLAINTS

Complaints about marks are best made to your tutor who is in a position to do something immediately. More general complaints should also go to your tutor. Harassment on any grounds, such as racial, sexual, religious and academic is totally unacceptable. Complaints about harassment are best taken to the University Mediator (extension 87478).