School of Economics and Finance (SEF)

QUAN 103 INTRODUCTORY MATHS FOR BUSINESS

Trimester 3, 2005

COURSE OUTLINE

Contact Details
Below are the contact details of the staff member co-ordinating and teaching QUAN 103.

Mrs Penelope de Boer
100-Level SEF Course Director as well as Course Co-ordinator and Lecturer
Rm 129, Easterfield Building (EA, Kelburn), Ph: 463 7449 OR
Rm 319, Rutherford House (RH, Pipitea), Ph: 463 5818
E-mail: penelope.deboer@vuw.ac.nz
Mobile: 021 071 3621 (You are welcome to send text messages but please do not leave any voice messages on her mobile as these will not be retrieved).

Please contact Penelope if you are having any difficulties with the course or questions which you have been unable to resolve at your tutorials. Mrs de Boer is also the person to see if you need to make special arrangements due to a disability, or if you want to appeal your test mark or terms result. General communication regarding the course will be made by Mrs de Boer during lectures and also via blackboard announcements, see http://blackboard.vuw.ac.nz

Class Times and Room Numbers
The duration of the course is 7 November to 22 December 2005, of which the exam period is inclusive.

The course will be taught by means of four 2 hour lectures and one tutorial session per week.

	DAY	TIME	ROOM
LECTURES	M, T, W, Th	1.10pm – 3.00pm	EA, LT 206, Kelburn Campus
TUTORIALS	You need to select	tba	tba

Attendance at lectures is voluntary; you should assess your need to attend by the degree to which you can do the tutorial and assignment questions. The lecture schedule for Trimester 3, 2005 is set out below. Note that this is an approximate guide only. On any given day the lecturer may be slightly ahead or slightly behind the suggested date in the lecture outline, depending on the emphasis and time spent on individual topics.

Week 1: November 7-11		Pages from Textbook
1	Introduction, real numbers, operations	1–6
2	Powers	6–7
3	Roots	7
4	Inequalities, absolute values	7–9
5	Simplifying expressions	20–21
6	Solving single equations	21–23
7	Simultaneous equations	23
8	Problems	95–98

Week 2: November 14 - 18
9	Logarithms	29
10	Properties of logs; problems	29–30
11	Functions	37
12	Graphing straight lines and simple curves	38–40
13	Graphing more complicated curves	
14	Graphs of log and exponential functions	41
15	Slopes of straight lines and curves	58-61
16	Derivatives and simple rules	61–63

Week 3: November 21 - 25
17	Product and quotient rules	63–64
18	Chain rule	64
19	Derivatives of log and exponential functions	64
20	Second derivatives, convexity and concavity	73
21	Local maxima and minima	73
22	Global maxima and minima	74
23	Integration	82–84
24	Areas and integrals	84–85

TEST Friday 25 November time tba

Week 4: November 28 – December 2
25	Simple and compound interest	99–100
26	Discounting	101
27	Investment appraisal	102–103
28	Problems	
29	Vector operations	108–110
30	Matrix operations	110–114
31	Introduction to linear programming	114–115
32	Graphical and arithmetic solutions	115–121

Week 5: December 5 - 9
33	Linear programming	
34	Revision	

Tutorial times will be announced at the first lecture. You do not need to sign up for a tutorial for QUAN 103; simply attend those that suits you best. Please note that tutorials will begin in the first week of lectures. Again, attendance is not compulsory however if you are going to attend, then you are expected to have worked through most of the week's tutorial exercises prior to the tutorial session.

Tutorials are groups of ten to fifteen students and a tutor, meeting for fifty minutes once a week. They provide a forum for discussing problems and working through exercises. Tutorial exercises and discussion material are specified in the Handbook. The exercises have been designed to give structure to the tutorial sessions and to provide a focus for discussion, but it is expected that tutorials will range beyond them.

Course Objectives
The objective of this course is to provide an introduction to mathematical techniques which are useful for the study and practice of business. Students planning to advance in Economics or Money and Finance should note that QUAN 111 is the preferred maths course. QUAN 103 alone is not really sufficient, however it is an ideal paper to take for those students who find mathematics difficult and wish to gain more knowledge and confidence in this area.

Course Content

QUAN 103 is an introductory mathematics for business course offered by the School of Economics and Finance within the Faculty of Commerce and Administration. The sequence of topics will be as follows:

1. Basic algebra
2. Functions and graphs
3. One-variable calculus
4. Introductory financial maths
5. Basic linear algebra
6. Linear programming

Students with a weak mathematical background and aiming at an average pass should expect to spend eight hours a week in class and a further four hours per week. In addition to this, a further four hours per week on average should be spent reading the handbook before lectures, doing assignments and preparing for clinics or the test.

Readings

The recommended text for the course, but for which you are not expected to purchase is:

- Proffit, Penelope. *Maths Made Easy*. Pearson ed 2002 (It is available from Victoria Book Centre in Kelburn for $34.95)

The 2005 Summer Handbook is available from the Student Notes Distribution Centre, Level , Student Union Complex at the Kelburn campus. All students should obtain a copy of this Handbook.

The following is a list of supplementary readings which are optional alternative texts that you may find helpful: (VUW library reference numbers are given where available)

Frank S. Budnick, *Applied Mathematics for Business, Economics and the Social Sciences, 4th ed*. (McGraw-Hill, 1993)

E.F. Haeussler and R. Paul, *Introductory Mathematical Analysis, 7th ed*. (Prentice-Hall, 1993)

D. Leonard, *Mathematical Methods in Accountancy, Economics and Finance* (Prentice-Hall of Australia, 1980) QA 36 / L581 / M

K. Holden and A.W. Pearson, *Introductory Mathematics for Economists 2nd ed.* (Macmillan Press, London, 1983) HB 135 / H726 / I / 1983

D.G. Zill, E.F. Beckenbach, I. Drooyan and W. Wooton, *College Mathematics for Students of Business* (Wadsworth, 1977) QA 37.2 / C697

E.T. Dowling, *Mathematics for Economists* (Schaum/McGraw-Hill, 1980)
HB 135 / D747 / S (good selection of worked problems)

Materials and Equipment

You will need a silent calculator that can evaluate powers and logs. You may opt for a programmable calculator if you wish, but this is not necessary as the formulas will be supplied, including those required for your final examination. Internet access to regularly check your blackboard site is also an important course requirement. See http://blackboard.vuw.ac.nz

Assessment Requirements

Your final grade will be determined on your achievement in the following forms of assessment:

(a) Test 30% + Exam 70% (or Exam 100% if exam mark better than test mark)
The test, covering Lectures 1-22, will be held at a time to suit on Friday 25 November, while the exam, covering the whole of the course, will be held in the end of year examination period, on or before 22 December.

(b) Mandatory Course Requirements (Terms)
A provisional Terms list will be posted on Friday December 9. To obtain Terms you must:

(i)   receive at least 2 out of 8 for the 4 assignments,

(ii) sit the test

Students denied Terms may appeal to Mrs de Boer. However, for your appeal to have any chance of success, you must present evidence of special circumstances that caused you to fail Terms. If your performance in the test or assignments is affected by ill health you should take a medical certificate to Mrs de Boer as soon as possible.
If you fail to meet the mandatory course requirements you will receive an ungraded fail, ie Q will appear on your record.

Your Assignment questions are printed in the Handbook. They are due on Mondays at 3.00 p.m. starting from November 14 and are to be handed in at the lecture. Please do not place the assignments anywhere-else.

**Head your assignments with your NAME, your ID number and the assignment
number. STAPLE all sheets together - DO NOT FOLD your assignments or seal them
shut. Do NOT enclose your assignment in a plastic sleeve.**

Assignments not meeting these conditions, or which are late, will not be marked. Special consideration in cases of illness, serious injury, or personal bereavement, may be given provided evidence is submitted in writing, with appropriate supporting documents, to Mrs Penelope de Boer. Assignment marks do not count directly towards the course assessment, but they will be taken into account for students on the border-line or who do not sit the final exam. Therefore they should be your own work, not copied from others. (Copied work will be given zero marks.)

Your assignments will be given one of three marks:
0 = the work submitted is of an unacceptable quality
1 = the work submitted shows a reasonable understanding/accuracy, but some flaws or omissions
2 = the work submitted is perfect or near perfect

While a total of 2/8 is required for terms (see above), a mark of less than 4/8 would indicate that you may struggle to pass the test and/or final exam. Your assessed assignments will be returned to you at tutorials. Any uncollected assignments will be held by Mrs Penelope de Boer.

Below is the schedule for the submission of your assignments:

Assignment	Date due	Time due
1	Monday November 14	3.00 p.m.
2	Monday November 21	3.00 p.m.
3	Monday November 28	3.00 p.m.
4	Monday December 5	3.00 p.m.

It is not a requirement to submit typed answers to assignments, but it is expected that they will be clearly legible. Avoid the use of abbreviations and symbols not used in lectures or the textbook. Model answers to assignment questions will be available on Blackboard, so make sure you look at these regularly and learn from your mistakes.

Penalties
Late assignments without prior approval will be given a zero mark. There are no penalties for exceeding any word limits but please try to keep your answers concise and within the recommended limit.

Mandatory Course Requirements
In order to warrant sitting the final examination, you must satisfy all mandatory course requirements set out below. Failure to do so will mean that you will receive an ungraded fail for the course, whether or not you choose to sit the final examination. The terms list (a list of those who have met the mandatory course requirements) will be posted on Blackboard by 9 December.

Communication of Additional Information
Please check your blackboard notices regularly as this is an important communication tool for QUAN 103. See http://blackboard.vuw.ac.nz

Faculty of Commerce and Administration Offices
Railway West Wing (RWW) - FCA Student Administration Office
The Student Administration Office is located on the ground and first floors of the Railway West Wing. The ground floor counter is the first point of contact for general enquiries and FCA forms. Student Administration Advisers are available to discuss course status and give further advice about FCA qualifications. To check for opening hours call the office on 463-5376.

Easterfield (EA) - FCA/Law Kelburn Office
The Kelburn Campus Office for the Faculties of Commerce & Administration and Law is situated in the Easterfield Building - it includes the ground floor reception desk (EA005) and offices 125a to 131 (Level 1). The office is available for the following:
- Duty tutors for student contact and advice.
- Information concerning administrative and academic matters.
- FCA Student Administration forms (e.g. application for academic transcripts, requests for degree audit, COP requests).
- Examinations-related information during the examination period.

Check with the Student Administration Office for opening times on 463-5376.

General University Policies and Statutes
Students should familiarise themselves with the University's policies and statutes, particularly those regarding assessment and course of study requirements, and formal academic grievance procedures.

Student Conduct and Staff Conduct
The Statute on Student Conduct together with the Policy on Staff Conduct ensure that members of the University community are able to work, learn, study and participate in the academic and social aspects of the University's life in an atmosphere of safety and respect. The Statute on Student Conduct contains information on what conduct is prohibited and what steps can be taken if there is a complaint. For queries about complaint procedures under the Statute on Student Conduct, contact the Facilitator and Disputes Advisor. This Statute is available in the Faculty Student Administration Office or on the website at: www.vuw.ac.nz/policy/StudentConduct.
The policy on Staff Conduct can be found on the VUW website at:
www.vuw.ac.nz/policy/StaffConduct.

Academic Grievances
If you have any academic problems with your course you should talk to the tutor or lecturer concerned or, if you are not satisfied with the result of that meeting, see the Head of School or the Associate Dean (Students) of your Faculty. Class representatives are available to assist you with this process. If, after trying the above channels, you are still unsatisfied, formal grievance procedures can be invoked. These are set out in the Academic Grievances Policy which is published on the VUW website:
www.vuw.ac.nz/policy/AcademicGrievances.

Academic Integrity and Plagiarism

Academic integrity is about honesty – put simply it means **no cheating**. All members of the University community are responsible for upholding academic integrity, which means staff and students are expected to behave honestly, fairly and with respect for others at all times.

Plagiarism is a form of cheating which undermines academic integrity. Plagiarism is **prohibited** at Victoria.

The University defines plagiarism as follows:
Plagiarism is presenting someone else's work as if it were your own, whether you mean to or not.

'Someone else's work' means anything that is not your own idea, even if it is presented in your own style. It includes material from books, journals or any other printed source, the work of other students

or staff, information from the Internet, software programmes and other electronic material, designs and ideas. It also includes the organization or structuring of any such material.

Plagiarism is not worth the risk.
Any enrolled student found guilty of plagiarism will be subject to disciplinary procedures under the Statute on Student Conduct *(*www.vuw.ac.nz/policy/studentconduct) and may be penalized severely. Consequences of being found guilty of plagiarism can include:
- an oral or written warning
- suspension from class or university
- cancellation of your mark for an assessment or a fail grade for the course.

Find out more about plagiarism and how to avoid it, on the University's website at:
[*www.vuw.ac.nz/home/studying/plagiarism.html*](http://www.vuw.ac.nz/home/studying/plagiarism.html)*.*

Students with Disabilities
The University has a policy of reasonable accommodation of the needs of students with disabilities. The policy aims to give students with disabilities an equal opportunity with all other students to demonstrate their abilities. If you have a disability, impairment or chronic medical condition (temporary, permanent or recurring) that may impact on your ability to participate, learn and/or achieve in lectures and tutorials or in meeting the course requirements, then please contact the Course Coordinator as early in the course as possible. Alternatively you may wish to approach a Student Adviser from Disability Support Services to confidentially discuss your individual needs and the options and support that are available. Disability Support Services are located on Level 1, Robert Stout Building, or phoning 463-6070, email: disability@vuw.ac.nz. The name of your School's Disability Liaison Person can be obtained from the Administrative Assistant or the School Prospectus.

Student Support
Staff at Victoria want students' learning experiences at the University to be positive. If your academic progress is causing you concern, please contact the relevant Course Co-ordinator, or Associate Dean who will either help you directly or put you in contact with someone who can.

The Student Services Group is also available to provide a variety of support and services. Find out more at www.vuw.ac.nz/st_services/ or email student-services@vuw.ac.nz.

VUWSA employs two Education Coordinators who deal with academic problems and provide support, advice and advocacy services, as well as organising class representatives and faculty delegates. The Education Office is located on the ground floor, Student Union Building, phone 463 6983 or 463 6984, email education@vuwsa.org.nz.

Manaaki Pihipihinga Maori and Pacific Mentoring programme (Faculties of Humanities and Social sciences and Commerce and Administration).

- **What:-**Academic Mentoring for Maori and Pacific students studying at all levels in the above schools. Weekly sessions for an hour with a mentor to go over assignments and any questions from tutorials or lectures. Registered students can use the facilities, study rooms and computer suite, at any time, at Kelburn and Pipitea.

- Mature student and Post grad network

If you would like to register as a mentor or mentee please contact the coordinator.

Where:
Melissa Dunlop
Programme Coordinator
Room 109 D
14 Kelburn Parade: back courtyard
Ph: 463-6015
Email: Maori-Pacific-Mentoring@vuw.ac.nz
Please Note: A mentoring room will also be running at Pipitea Campus starting January. Please contact the Programme Coordinator for details.