

School of Economics and Finance

QUAN103

Trimester 1 2006

COURSE OUTLINE

Contact Details

The lecturer for the course is:

Penelope de Boer and her hours will generally be:

Mon, Wed, Thu 9am - 11am, 2pm – 4pm

- EA128 ph 463 7449

Tue, Fri all day

- RH319 ph 463 5818.

The **Course Coordinator** is also **Penelope de Boer**. She has overall responsibility for the course and is the person to speak to about anything. You should see her if you are having any difficulties with the course or have any academic questions which you have been unable to resolve at tutorials. Mrs de Boer is also the person to see if you need to make special arrangements because of a disability, or if you want to appeal your test mark.

Class Times and Room Numbers

Lecture times: Mon, Wed, Thurs, 11am-11:50am, CO LT122

Tutorial times will be announced in the first lecture. These are optional and you will NOT be required to sign up for a particular time.

Approximate examination period 5 – 25 June 2006

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 & Finance should note that QUAN 111 is the preferred Maths course - QUAN 103 alone is not really sufficient.) The sequence of topics will be as follows:

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

LECTURE SCHEDULE

Lecture	Topic	pp
Week 1:		
1	Introduction; real numbers, operations	1–6
2	Powers	6–7
3	Roots	7
Week 2:		
4	Inequalities; absolute values	7–9
5	Simplifying expressions	20–21
6	Solving single equations	21–23
Week 3:		
7	Simultaneous equations	23
8	Problems	
9	Logarithms	29
Week 4:		
10	Properties of logs; problems	29–30
11	Functions	37
12	Graphing straight lines and simple curves	38–40
Week 5:		
13	Graphing more complicated curves	
14	Graphs of log and exponential functions	41
15	Slopes of straight lines and curves	58–61
Week 6:		
16	Derivatives and simple rules	61–63
17	Product and quotient rules	63–64
18	Chain rule	64
Week 7:		
19	Derivatives of log and exponential functions	64
20	Second derivatives, convexity and concavity	73
21	Local maxima and minima	73
Week 8:		
22	Test in class time	
23	Global maxima and minima	74
24	Integration	82–84
Week 9:		
25	Areas and integrals	84–85
26	Simple and compound interest	99–100
27	Discounting	101
Week 10:		
28	Investment appraisal	102–103
29	Problems	
30	Vector operations	108–110

Week 11:

31		
32	Matrix operations	110–113
33	Introduction to linear programming	114

Week 12:

34	Graphical and arithmetic solutions	114-
35	Revision	
36	Drop in session	

(where all references are to “Maths Made Easy”).

Readings

The recommended textbook, available at Victoria Book Centre, is

Penelope Proffitt, (now de Boer) *Maths Made Easy*, (Pearson Ed 2002)

Available from the SNDC is the **coursebook**, containing the lecture schedule and tutorial and assignment questions. **All students should obtain a copy of the 2006 Coursebook.**

Supplementary readings

Optional alternative texts (VUW library reference numbers given where available) are:

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 must have a calculator that evaluates powers and logs. (The recommended model is a modern Casio fx-82 RRP approx \$30). Calculators will be essential for the test and the final exam, however, they must be silent in operation and have their own power source. Graphics calculators and programmable calculators are permitted during the course, but **NOT** in the exam.

Assessment Requirements

- (i) Assignments 10% + Test 20% + Exam 70% **OR** Test 30% + Exam 70% **OR** Exam 100% whichever generates the highest mark. The test, covering Lectures 1-21, will be held in class time 1 May 2006, while the exam, covering the whole of the course, will be held in the end of trimester examination period, 5 – 25 June, 2006.
- (ii) Submission of Assignments
Assignment questions are printed in the Handbook. They are due on Mondays at

11am. The first assignment is due on Monday 13 March. All assignments are to be handed in at the lecture. Please do not place the assignments anywhere-else.

The 10 assignments will be given one of three marks:

- 0, indicating the assignment is of unacceptable quality
- 1, indicating reasonable understanding/accuracy, but some flaws or omissions
- 2, indicating a perfect or near-perfect assignment.

The best seven (7) assignments may contribute to your final grade. Please do not be tempted to miss assignments – they are vital to your understanding of the material as the course progresses.

Mandatory Course Requirements

There are no mandatory course requirements other than sitting the exam.

Communication of Additional Information

Additional information will be communicated by way of Blackboard <http://www.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 (04) 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 (04) 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.

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 faculties. Weekly sessions for an hour with a mentor to go over assignments and any questions from tutorials or lectures. Registered students can use the faculty's 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: (04) 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.