

School of Economics and Finance

QUAN103

INTRODUCTORY MATHS FOR BUSINESS

Trimester One 2007

COURSE OUTLINE

Contact Details

Penelope de Boer RH 319 ext 5818 and EA128 ext 7449 or 021 071 362

Note: EA128 is accessed by reporting to the counter in EA005 first.

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 or Terms result.

6105	P1	MR	10:00	10:50	HULT220
6105	P1	W	10:00	10:50	EALT206

Class Times and Room Numbers

Lecture timetable: Monday, and Thursday 10:00 HULT220
Wednesday 10:00 EALT206

There will also be optional tutorials for which you can sign up (after 4:00pm on Tuesday 27 February) at <http://signups.vuw.ac.nz>. Information regarding times for these will be available at that URL after that time.

The course will have a final exam during the period June 2 – June 30 2007

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 |

Course Content

Lecture Schedule

Readings refer to pages in *Maths Made Easy**

<i>Lecture</i>	<i>page</i>
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
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	41
14 Graphs of log and exponential functions	58–61
15 Slopes of straight lines and curves	61–63
16 Derivatives and simple rules	63–64
17 Product and quotient rules	64
18 Chain rule	64
19 Derivatives of log and exponential functions	73
20 Second derivatives, convexity and concavity	73
21 Local maxima and minima	74
22 Global maxima and minima	82–84
23 Integration	84–85
24 Areas and integrals	99–100
25 Simple and compound interest	101
26 Discounting	102–103
27 Investment appraisal	108–110
28 Problems	110–114
29 Vector operations	114–115
30 Matrix operations	115–121
31 Introduction to linear programming	
32 Graphical and arithmetic solutions	
33 Linear programming	
34 - 36 Revision	

Expected Workload

A student with a weak mathematical background and aiming at an average pass should expect to spend three hours a week in lectures, one hour in a tutorial and a further six hours per week, on average, reading the textbook before lectures, doing the assignments and preparing for tutorials or the test and exam.

Readings

The recommended textbook, available at Victoria Book Centre, is

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

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)

Available on blackboard are the tutorial and assignment questions.

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 final 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 available on Blackboard. They are due on Mondays at

- (iii) 11am. The first assignment is due on Monday 12 March. All assignments are to be handed in at the lecture. Please do not place the assignments anywhere-else. We do not require typed answers to assignments, but we do expect them to 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.

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.

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 for the course.

Communication of Additional Information

Additional material will be posted on Blackboard. Emails may also be sent to the email address that is registered with the University (as on your enrolment).

Faculty of Commerce and Administration Offices

Railway West Wing (RWW) - FCA Student and Academic Services Office

The Faculty's Student and Academic Services 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 Student and Academic Services Office on (04) 463 5376.

Easterfield (EA) - FCA/Education/Law Kelburn Office

The Kelburn Campus Office for the Faculties of Commerce and Administration, Education 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.
- Forms for FCA Student and Academic Services (e.g. application for academic transcripts, requests for degree audit, COP requests).
- Examinations-related information during the examination period.

To check for opening hours call the Student and Academic Services Office on (04) 463 5376.

General University Policies and Statutes

Students should familiarise themselves with the University's policies and statutes, particularly the Assessment Statute, the Personal Courses of Study Statute, the Statute on Student Conduct and any statutes relating to the particular qualifications being studied; see the Victoria University Calendar or go to www.vuw.ac.nz/policy.

For information on the following topics, go to the Faculty's website www.vuw.ac.nz/fca under Important Information for Students:

- Academic Grievances
- Academic Integrity and Plagiarism
- Student and Staff Conduct
- Meeting the Needs of Students with Impairments
- Student Support

Manaaki Pihipihinga Programme

Manaaki Pihipihinga is an academic mentoring programme for undergraduate Māori and Pacific students in the Faculties of Commerce and Administration, and Humanities and Social Sciences. Sessions are held at the Kelburn and Pipitea Campuses in the Mentoring Rooms, 14 Kelburn Parade (back courtyard), Room 109D, and Room 210, Level 2, Railway West Wing. There is also a Pacific Support Coordinator who assists Pacific students by linking them to the services and support they need while studying at Victoria. Another feature of the programme is a support network for Postgraduate students with links to Postgraduate workshops and activities around Campus.

For further information, or to register with the programme, email manaaki-pihipihinga-programme@vuw.ac.nz or phone (04) 463 5233 ext. 8977. To contact the Pacific Support Coordinator, email pacific-support-coord@vuw.ac.nz or phone (04) 463 5842.