



School of Economics and Finance

QUAN 103 INTRODUCTORY MATHS FOR BUSINESS

Trimester 1 2005

COURSE OUTLINE

Contact Details

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 lecturer for the course is: Penelope Proffitt and her hours will generally be:

Mon, Wed, Thu 8:30am - 10am, then for a short time after 12 pm - EA129 ph 463 7449
Tue, Fri all day and Mon, Wed, Thu afternoons - RH319 ph 463 5818.

The **Course Coordinator** is also **Penelope Proffitt**. 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. Ms Proffitt 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.

Class Times and Room Numbers

Lectures are scheduled for Mondays, and Thursdays in HMLT001 and Wednesdays in HMLT003 from 10am. to 10:50am.

Tutorials will be held once a week, you can choose either Thursday 12-12:50pm CO333 or Thursday 1:10-2:00pm, CO341. If you cannot make either of these times then you are more than welcome to see me in my office on a one-one basis. The first tutorial will be held on Thursday 3 March.

The final exam will be held in the exam period, from 30 May – 18 June

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:

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

LECTURE SCHEDULE

<i>Lecture</i>	<i>topics</i>	<i>pp</i>
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	95–98
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	Public holiday on Monday 25 April	
23	Test Wednesday 27 April	
24	Global maxima and minima	74
Week 9: May 12–16		
25	Integration	82–84
26	Areas and integrals	84–85
27	Simple and compound interest	99–100
Week 10: May 19–23		
28	Discounting	101
29	Investment appraisal	102–103
30	Problems	
Week 11: May 26–30		
31	Vector operations	108–110
32	Matrix operations	110–114

- 33 Introduction to linear programming
- Week 12: June 2-6**
- 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, *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 2005 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 will need a calculator that can evaluate powers and logs. Please do not get a graphical calculator.

Assessment Requirements

- (i) Test 30% + Exam 70% (or Exam 100% if exam mark better than test mark)
The test, covering Lectures 1-21, will be held at a time to suit on Friday 3 December, while the exam, covering the whole of the course, will be held in the end of trimester examination period, 30 May – 18 June.
- (ii) Submission of Assignments
Assignment questions are printed in the Handbook. They are due on Mondays at 3.00 p.m. The first assignment is due on Monday 7 March. All assignments 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.

Return of Assignments

Assignments will be returned at tutorials; uncollected assignments will go back to Penelope Proffitt.

Penalties

Assignments not meeting these conditions, or which are late, will not be marked. 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.)

Mandatory Course Requirements (Terms)

A provisional Terms list will be posted on Friday May 27. To obtain Terms you must:

- (i) submit on time at least 7 reasonable attempts out of the first 9 assignments,
- (ii) sit the test and score at least 30%.

Students denied Terms may appeal to Ms Proffitt. 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 Ms Proffitt 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.**

Communication of Additional Information

Additional information or information on changes will be posted on Blackboard. You may also be sent emails via your SCS email account, so please check this regularly. (This is your University email address).

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.