

School of Economics and Finance

**QUAN 103**  
**INTRODUCTORY MATHS FOR BUSINESS**

Trimester One 2010

**COURSE OUTLINE**

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<b>Course Lecturer:</b>	Kate Hill Email: <a href="mailto:kate.hill@vuw.ac.nz">kate.hill@vuw.ac.nz</a>	EA128/RH315 (weeks 7-12) Ph: 463 5233 ext 8571
<b>Course Coordinator/ Lecturer:</b>	Jacek Krawczyk (pronounced Ya-tcek Kraff-chick) (weeks 1-6) Email: <a href="mailto:j.krawczyk@vuw.ac.nz">j.krawczyk@vuw.ac.nz</a>	RH325/EA128 Ph: 463 5352
<b>Course Administrator:</b>	Francine McGee Email: <a href="mailto:francine.mcgee@vuw.ac.nz">francine.mcgee@vuw.ac.nz</a>	RH319 Ph: 463 5818

Jacek Krawczyk has overall responsibility for the course and is the person to speak to about course related information. However, he will be on leave from 10 May 2010. After this date, contact the course administrator. You should see the current lecturer if you are having difficulties with the course or have any academic questions, which you have been unable to resolve at tutorials. The current lecturer is also the person to see if you want to appeal a mark. The Course Administrator is the appropriate person to see about organisational and administrative matters, such as tutorial signups.

**Trimester Dates**

Monday 1 March to Wednesday 4 July 2010.

**Teaching Period: Monday 1<sup>st</sup> March – Friday 4<sup>th</sup> June 2010**

**Study Period: Monday 7<sup>th</sup> June – Thursday 10<sup>th</sup> June 2010**

**Examination Period: Friday 11<sup>th</sup> June – Wednesday 30<sup>th</sup> June 2010 (inclusive)**

**Withdrawal from Courses:**

Information available via

**Withdrawal dates: Late withdrawals with Associate Dean (Students) permission**

(See Section 8: Withdrawals - from the Personal Courses of Study Statute)

<http://policy.vuw.ac.nz/Amphora!~~policy.vuw.ac.nz~POLICY~000000001743.pdf>

**Withdrawal dates: refunds:**

<http://www.victoria.ac.nz/home/admisenrol/payments/withdrawalsrefunds.aspx>

**Class Times and Room Numbers**

Wednesdays	12.00pm – 12.50pm	HULT119
Thursdays	12.00pm – 12.50pm	HULT119

**Tutorials**

Wednesday	1.10pm – 2.00pm	CO228
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There are 8 tutorials per trimester. Exact tutorial dates will be given in the first lecture. You can sign up for a tutorial at <https://signups.victoria.ac.nz>.

**Course Content**

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. The sequence of topics will be as follows:

- §1. Basic algebra
- §2. Functions and graphs
- §3. One-variable differentiation
- §4. Basic linear algebra

**Lecture Schedule**

Numbers in the right column refer to pages in *Mathematics for Business and Economics* (see **Readings**).

**Lectures**

1.	Introduction; real numbers, operations	-- Ch. 1	1 – 4
2.	Powers, inequalities, absolute values	-- Ch. 2	8 – 18
3.	Solving equations	-- Ch. 2	22 – 30
4.	Solving inequalities	-- Ch. 2	30 – 31
5.	Subscripts, sums, products, factorial	-- Ch. 2	31 – 33
6.	Functions and relations	-- Ch. 4	63 – 67
7.	Graphing functions	-- Ch. 4	68 – 70
8.	Continuity and limits	-- Ch. 4	71 – 75
9.	Linear interpolation; inverse functions	-- Ch. 4	80, 76 – 79
	<b>Mid-term break</b>		
10.	Exponential and logarithmic functions	-- Ch. 4	81 – 86
11.	Slopes as velocities of change	-- Ch. 5	101–102
12.	Slopes of nonlinear functions	-- Ch. 5	103–104
13.	Differentiation by first principles	-- Ch. 5	104–105
14.	Derivatives and rules	-- Ch. 5	105–106
15.	Product, quotient and chain rules	-- Ch. 5	107–111
16.	Second derivatives, convexity and concavity	-- Ch. 5	111–127
17.	Applications of maxima and minima	-- Ch. 5	Same
<b>18.</b>	<b>Test on material covered in lectures 1 – 16</b>		
19.	Vectors, interpretation, operations	-- Ch. 8	235–240

20.	Linear independence	-- Ch. 8	240–244
21.	Matrices, interpretation, operations	-- Ch. 8	244–250
22.	Determinants and ranks	-- Ch. 8	250 – 255
23.	Information on Excel functions	-- Appendix	289

### Course Learning Objectives

By the end of this course, students should be able to:

- Comprehend and use basic algebra
- Comprehend and use functions and graphs
- Understand and apply one-variable differentiation (derivatives, product and quotient rules, chain rule, second-order derivatives) to obtain local and global maxima and minima
- Use linear algebra; vectors and matrices.

### Course Delivery

The course material will be delivered via 24 lectures (two a week for 12 weeks), plus eight tutorial sessions. It will be essential that students have access to the course Blackboard site.

### Expected Workload

This is a 15 point course. One point typically equates to 10 hours of work. The resulting 150 hours should be spread evenly over the 12 week trimester, break, study week and exam period.

A student with a weak mathematical background and aiming at an average pass should expect to spend ten to twelve hours per week on this subject, two hours in lectures, one hour in a tutorial (optional) and six to nine hours reading, preparing for lectures, assignments and tutorials.

### Readings

The recommended textbook, available at Victoria Book Centre, is:

**Penelope de Boer & Mohammed Khaled, *Mathematics for Business and Economics*, (Pearson/Prentice Hall 2007)**

### Materials and Equipment

You will need a calculator that can evaluate powers and logs.

### Assessment Requirements

**Test 30% + Exam 70% (or Exam 100% if exam mark better than test mark).**

The test, covering Lectures 1 – 16, will be held in class time on Thursday 18<sup>th</sup> May (Lecture day # 18) while the 2 hour exam covering the whole of the course, will be held in the trimester examination period (see below for dates of the exam period).

*Note: Your assessed work may also be used for quality assurance purposes, such as to assess the level of achievement of learning objectives as required for accreditation and audit purposes. The findings may be used to inform changes aimed at improving the quality of FCA programmes. All material used for such processes will be treated as confidential, and the outcome will not affect your grade for the course.*

### Examinations

Students who enrol in courses with examinations are obliged to attend an examination at the University at any time during the formal examination period.

The final examination for this course will be scheduled at some time during the period from  
**Examination Period: Friday 11<sup>h</sup> June – Wednesday 30<sup>th</sup> June 2010**

### **Penalties**

N/A

### **Schedule for Submission of Assignments**

Each week, starting in week three an assignment is due at 10am in the Wednesday lecture. Please do not hand your assignments in anywhere else. They will be returned to you in the lectures the following Wednesday. They will be marked 0 (nothing done), 1 (you will need to work harder) or 2 (you are doing well).

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.

### **Mandatory Course Requirements**

There are no mandatory course requirements for the course.

### **Class Representative**

A class representative will be elected in the first class, and that person's name and contact details will be available to VUWSA, the Course Coordinator and the class. The class representative provides a communication channel to liaise with the Course Coordinator on behalf of students.

### **Communication of Additional Information**

How additional information or information on changes will be conveyed to students, e.g. via class noticeboards, Blackboard, email to all class members, etc.

Outlines for practicum courses specify how students will be contacted during the course.

**For the following important information follow the links provided:**

### **Academic Integrity and Plagiarism**

<http://www.victoria.ac.nz/home/study/plagiarism.aspx>

### **General University Policies and Statutes**

<http://www.victoria.ac.nz/home/about/policy>

**AVC (Academic) Website: information including: Conduct, Academic Grievances, Students with Impairments, Student Support**

[http://www.victoria.ac.nz/home/about\\_victoria/avcadademic/Publications.aspx](http://www.victoria.ac.nz/home/about_victoria/avcadademic/Publications.aspx)

### **Faculty of Commerce and Administration Offices**

<http://www.victoria.ac.nz/fca/studenthelp/>

### **Manaaki Pihipihinga Programme**

[http://www.victoria.ac.nz/st\\_services/mentoring/](http://www.victoria.ac.nz/st_services/mentoring/)

