



## COURSE OUTLINE

**FINM/QUAN 371      Financial Mathematics      24 points**

**School of Economics and Finance      1/3 2005**

**Staff**      Dr Leigh Roberts, RH323, phone 463-5937 (coordinator/lecturer)  
 email: leigh.roberts@vuw.ac.nz      FAX: 463 5014

**Lectures**      Tuesday, Wednesday, Friday      1.40 - 2.30      RLWY 501

**Tutorials**      Wednesday      10.30 - 11.20      RLWY 315  
 Friday      9.30-10.20      RLWY 220  
 Friday      10.30-11.20      RLWY 125

The coordinator prefers to be contacted by email or through the tutorials, and is in any case unavailable on Mondays and Thursdays.

### Objectives

To be introduced to the principal ideas underpinning the mathematics of finance, and to gain some experience of the application of these ideas to the financial and business worlds. To be introduced to the principles of risk management, insurance and derivative securities.

### Course content

The content of the course is approximately as follows.

Week	Topic	Notes Chs.	Test	Project	Assign. set	in
1	Elementary: $i, i^{(2)}, d, d^{(2)}, \delta$	1,2			1	
2	Annuities: $a_{\overline{n} }, s_{\overline{n} }$	2,3			2	1
3	Loans and Makeham's Formula	3,4			3	2
4		4,5			4	3
5	Rule of 78	6	T1	discussion deadline		
<i>Mid trimester break, 2 weeks</i>						
6	Real rate of return	7			5	4
7	LIRR, TWRR	8			6	5
8	duration, immunisation	9, 10		discussion deadline	7	6
9		10,11,12	T2			
10	life insurance	12		due (Fri. lecture)	8	7
11	Derivative securities	13			9	8
12	revision				10	9
13	Exam study week					10

### Readings

Notes will be made available in Blackboard, usually as *pdf* files. It is *not* recommended that you purchase any books for this course.

## Assessment

10%	Average of the weekly assignment marks
20%	Project (10% maximum if coordinator not consulted by end of week 8)
15%	Test 1, 50 minutes, held in a lecture time in week 5
15%	Test 2, 50 minutes, held in a lecture time in week 9
40%	Final 2 hour Registry exam in June

Assignments will be set each week at the Tuesday lecture, normally to be handed in at the Friday lecture in the following week, and to be returned marked at the Friday lecture following. The dates of the tests within the specified weeks will be set in consultation with the class.

## Project

The topic for the project may be chosen freely, provided that it is broadly consonant with the course objectives, and is subject to the approval of the course coordinator (by email to the student).

The length of the project should normally be between 2,000 and 3,000 words. If the project looks like exceeding the maximum length, you should discuss the matter with the coordinator well before the due date for submission.

Provided the student has good reason (for instance a medical certificate), and obtains permission *before* the due date from the course coordinator, there will be no penalty for handing in a project late. In other cases the project will first be graded on a basis comparable with those projects handed in on time, and then have 5% of that grade subtracted for each day or part-day for which the project is late.

The project is expected to be written *entirely* by the student. In cases where there is any doubt in the marker's mind as to whether the project is entirely the student's own work, the coordinator reserves the right to withhold the mark until the situation has been clarified.

## Written report

Towards the end of a lecture early in the course, students will be requested to write a short report on a topic to be announced at that time, to be written individually and submitted to the lecturer before leaving the class room. The length of the report should be about 200 words.

Those students not in the class room when the report is requested will be asked to submit such a report on a later occasion, with a different topic being announced just prior to the report being written. Such a report must be written in the coordinator's presence.

This report is to indicate to the coordinator which students need help with their English expression, and will not be used for assessment; nor will the reports be shown to anyone other than the coordinator. Should the standard of English in this report differ markedly from that in work handed in for assessment, the coordinator will discuss the matter with the student before a mark is given.

## Penalties

Assignments handed in late will attract a 10% penalty per day for the first five days, and be awarded zero after five days. Extensions may be negotiated prior to the deadline with the coordinator.

## Social

A class dinner is normally held at the end of the course, before exams start.

## Mandatory course requirements

Attendance at both tests and the 2 hour examination is compulsory. Students must also have submitted a written report, as described above.

## Communication of additional information

Course notices will generally be relayed in class, via email, and put into Blackboard. Other information is held by Sue Freeear in RH327.

email: [suzanne.freeear@vuw.ac.nz](mailto:suzanne.freeear@vuw.ac.nz) telephone: 463 5380

## 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:

<http://www.vuw.ac.nz/policy/StudentConduct>.

The policy on Staff Conduct can be found on the VUW website at:

<http://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:

<http://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](http://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](mailto: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 Coordinator, 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 [http://www.vuw.ac.nz/st\\_services/](http://www.vuw.ac.nz/st_services/) or email [student-services@vuw.ac.nz](mailto: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](mailto:education@vuwsa.org.nz).