STAT401/890 STOCHASTIC FINANCE
COURSE INFORMATION: SEMESTER 2, 2008

LECTURERS

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Aims

This unit aims to integrate a basic understanding of how financial markets work with the analytic tools for modelling their time-dependent structures. Since these structures are based on random ("stochastic") processes, stochastic models underpin the methods. Where feasible, analytical methods are developed. The aim is to present as much financial theory about securities markets as possible without requiring the advanced mathematics that is associated with continuous time models.

*Target Audienc*e: Students with a major in Actuarial Studies, Statistics, or Finance.

*Prerequisit*e: Basic probability theory (Stat272 or equivalent)

Text: Mathematics for Finance: An Introduction to Financial Engineering by M. Capinski and T. Zastawniak., Springer; 1st ed. 2003. Corr. 4th printing edition (July 6, 2003).
Webpage http://www-users.york.ac.uk/~tz506/m4f/

Lecture notes, assignments and associated material will be available via Blackboard.

Login at **http://learn.mq.edu.au/**.

Time and Place: Thursday 6-9pm in C5C 240

Blackboard

We'll be using Blackboard for discussions and dissemination of information. We'll regularly post updates of lecture notes and assignments, etc. If you have problems with connection to Blackboard please contact the Information Desk in the Library as soon as possible and fix the problem. Bad or no connection to the Blackboard will not be accepted as a factor affecting our standards of grading.

DISTANCE MODE

Distance students will receive lecture notes and assignments by mail. Please contact Leslie Mooney, the Administrator of Postgraduate Studies, if you feel the notes have gone astray. Her phone number is +61 2 9850 8550 and the email address is lmooney@efs.mq.edu.au.

Please send your assignment solutions in the first six weeks to
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Statistics Dept, EFS, Building E4A 508
Macquarie University
Sydney NSW 2109
Australia.
Email: akozek@efs.mq.edu.au

and in the remaining part of the course to
Dr Nino Kordzakhia,
Statistics Dept, EFS, Building E4A 537
Macquarie University
Sydney NSW 2109
Australia.
Email: nkordzak@efs.mq.edu.au

You can also submit your assignments via Blackboard.

COURSE WEBSITE

There is a course website at
http://www.stat.mq.edu.au/ug/units/stat_units400/stat401
The login button will take you to the WebCT login screen.

PROGRAM

1 (7 Aug)	Introduction: A Simple Market Model
2 (14 Aug)	Risk Free Assets
3 (21 Aug)	Risky Assets
4 (28 Aug)	Discrete Time Market Model
5 (4 sep)	Portfolio Management
6 (11 Sept)	Kelly Criterion and a Rule of Thumb
7 (18 Sept)	Forward and Future Contracts
8 (9 Oct)	Options: General Properties
9 (16 Oct)	Options Pricing
10 (23 Oct)	Financial Engineering
11 (30 Oct)	Variable Interest Rates
12 (6 Nov)	Stochastic interest rates
13 (13 Nov)	Credit risk modelling applications (Dr John Jarratt, head of Group Portfolio Unit, Westpac Banking Corporation)

ASSESSMENT

Assessment consists of:
Final exam 58%
4 random, not-announced, quick class tests 12% (3% each), (the external students have to return it by Blackboard on the same day)
2 Assignments 30% (15% each)

Satisfactory performance is required in all aspects of the unit. Students who have not performed satisfactorily in the assignments will not be permitted to sit the examination.

A calculator and four (4) A4 sheets of summary notes written on one or both sides in the student's own handwriting may be taken into the final examination.

PLAGIARISM. You can find the University policy on plagiarism at http://www.student.mq.edu.au/plagiarism/

SOFTWARE

Matlab is our preferable software for solving assignments and classroom problems. We will provide Matlab code used in solving examples discussed in the class. We also recommend using Scientific Notebook in reporting assignments and solving analytical problems.