MACQUARIE
UNIVERSITY~SYDNEY

STAT401/890 STOCHASTIC FINANCE
COURSE INFORMATION: SEMESTER 2, 2005

LECTURER

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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. From the text book: 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 Audience: Students with a major in Actuarial Studies, Statistics, or Finance.
Prerequisite: Basic probability theory (Stat272 or equivalent)
Text: Stanley R. Pliska, Introduction to Mathematical Finance: Discrete Time Models, Blackwell Publishing, 1997. webpage
Lecture notes, assignments and associated material will be available via WebCT. Login at http://online.mq.edu.au.
Time and Place: Thursday 6-9 in C5A 307
NOTE: Some examination questions in a related course in the UK are located at http://www.maths.lse.ac.uk/Courses/ma310.html#exams

WEBCT

We'll be using WebCT for discussions and information dissemination. I'll regularly post updates/corrections of lecture notes and assignments, etc. Please don't email me using WebCT – use my departmental email address.

DISTANCE MODE

Distance students will receive lecture notes and assignments by mail. Please contact Leslie Mooney, the postgraduate administrator, if you feel the notes have gone

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astray. Her phone number is +61 2 9850 8550 and email address is lmooney@efs.mq.edu.au.

Please send your assignment solutions to
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COURSE WEBSITE

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

PROGRAM

Week 1: Introduction
Weeks 2, 3: Single Period Securities Markets
Weeks 4, 5, 6, 7: Single Period Consumption and Investment
Weeks 8, 9: Multiperiod Securities Markets
Week 10: Binomial Option Pricing
Week 11: Credit risk modelling applications (Dr John Jarratt, head of Group Portfolio Unit, Westpac Banking Corporation)
Weeks 12, 13: Other Option Pricing Models

ASSESSMENT

Assessment consists of:
Final exam 70%
3 Assignments 30%

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.