

Information Sheet for Stochastic Methods in Finance– STAT920

Autumn Session 2008

Wollongong

Subject Coordinator and Lecturer:

Chandra Gulati (Room 15.135)

Email: cmg@uow.edu.au

Phone: (02) 42213836

Consultation: Tuesday 1.30PM-3.30PM, Thursday. 11.00AM-12.30PM Friday 1.30-3.00PM

Subject Prerequisites:

Subject to the approval of the Head of School

This information sheet must be read in conjunction with the general information on educational issues and student matters provided in the document "Policies and Services of the University, Faculty and School" published by the School of Mathematics and Applied Statistics. A copy may be obtained from the subject coordinator or at

<http://www.math.uow.edu.au/subjects/generic.shtml>

Topics & Lecturer

STAT920 covers necessary probabilistic concepts and models such as linear stochastic models, nonlinear stochastic models and nonlinear chaotic models used in finance. Topics discussed in this subject also include asset returns and their distribution, modelling of financial time series, martingale methods, stochastic processes, optimal stopping, the modeling of uncertainty using a Wiener process, Ito's formula as a tool of stochastic calculus, equivalent martingale measures and the applications of these methods to finance.

Lecturer: Chandra Gulati (Rm 15.135)

Phone: (02) 4221 3836

Email: cmg@uow.edu.au

Consultation: Wednesday 8.30-10.30AM

Friday 10.30AM-12.30PM

Textbook & Reference Books

Text: Lecture notes will be given during lectures

References:

Tsay Ruey S.(2005). Analysis of Financial Time Series John Wiley 2nd ed.

J. M. Steele (2000). Stochastic Calculus and Financial Applications, Springer.

E. Zivot and J. Wang (2003). Modeling Financial Time Series with S-Plus, Springer.

Salih N. Neftci (2000). An Introduction to the Mathematics of Financial Derivatives, 2nd Edition, Academic Press, Sydney.

Reference papers will be introduced during lectures.

You are not required to purchase reference books. Several copies of all these books are available in the Library. These readings are recommended only and are not intended to be an exhaustive list. Students are encouraged to use the Library catalogue and databases to locate additional readings with similar titles and contents.

Notices

The subject coordinator may need to contact you concerning

STAT920. Messages will be sent to your University email address. *You should check your email account at least once a week.*

Subject Learning Outcomes

A student who successfully completes this subject should be able to obtain some basic knowledge on Wiener Process, martingales, Ito's formula and their applications to finance.

Lectures

There is one 2 hour lecture each week.

Lecture time for STAT920 is

Thursday 8:30AM – 10:30AM Room 8.G25

You are expected to attend *all lectures* in STAT920. Experience has shown that poor attendance at lectures leads to poor performance in this subject.

Assessment

There will be 6 assignments. Assignments will be due in lectures in weeks 3, 5,7,9,11,13. Assignments will be returned in class (usually the following week).

Your final mark in STAT920 will be determined as follows:*

Assignments(5% each)--- 30%

Exam ---- 70%

Total – 100%

Scaling of marks is **not** a standard procedure in this subject.

Note that you are not required to "pass" each individual component to receive a Pass grade in STAT920. However, you would seriously jeopardize your chances of passing this subject if you do not aim to be successful in every component of the assessment.

Calculators

Please note that single-line-display calculators are permitted in examinations for this subject. They must not have alphanumeric keyboards (or capabilities) and they must not be programmable

in any way. If you are not sure whether your calculator is acceptable, have it checked well before any exam.

Cheating and Plagiarism

The University regards cheating and plagiarism very seriously. You may be failed in the subject, and perhaps even excluded or expelled from the University, for copying assignments from other students or other authors and submitting them as your own work; any student from whom you copy may also receive the same penalty.

Ensure that all submitted work is your own.

A breach of Examination Rules (even innocently having illegal aids in the examination room) may result in an automatic Fail in the subject and exclusion or expulsion from the University.

For further information, visit

<http://www.uow.edu.au/handbook/courserules/plagiarism.html>

Consultation

If you are having difficulty with STAT920, you are encouraged to seek advice from your lecturers or the subject coordinator (most tutors are casual staff and therefore are not available for consultation). For administrative matters, you should see the subject coordinator.

If you cannot come at the listed consultation times, contact the subject coordinator to arrange an appointment at a mutually convenient time.

**If you are having any difficulty with STAT920,
you should seek advice before it is too late.**

**Policies and Services of the University, Faculty and School can be found from
<http://www.math.uow.edu.au/current/generic.html>**