THE UNIVERSITY OF
NEW SOUTH WALES

Australian School of Business
School of Actuarial Studies

ACTL5109

FINANCIAL ECONOMICS FOR INSURANCE AND SUPERANNUATION

COURSE OUTLINE
SEMESTER 2, 2009

The University of New South Wales
Sydney 2052 Australia

Dear Students,

Welcome to ACTL5109 Financial Economics for Insurance and Superannuation. This course is one of eight courses covering the Core Technical subjects of the Institute of Actuaries offered in the Master of Actuarial Studies. Some of you may also be completing one or both of the courses ACTL5106 Insurance Risk Models and ACTL5103 Stochastic Models for Actuarial Applications in this session. In the early weeks of the courses you will find that you will have to adjust to the study load in the courses and also take some time to note the links between these courses.

Financial economics has become important to actuarial practice and having a background in this area and its applications is required in the current financial services industry. This course will provide you with a foundation in the financial economics required for modern financial markets and modern actuarial practice. It provides an essential component of the actuarial courses in the Master of Actuarial Studies. I hope you find the course challenging and interesting.

This course outline has details of the course requirements, course aims and learning outcomes, content, teaching methods, assessment tasks, texts and readings, and expectations. Please read it carefully and thoroughly, as it will be assumed that you are familiar with the contents.

If you have any questions about the course at any time then please contact me.

I look forward to guiding your learning through the duration of the course.

Dr. Changki Kim

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1. STAFF CONTACT DETAILS

The Course Coordinator and Course Lecturer for this course is:

Staff	E-mail	Room	Telephone
Dr Changki Kim	c.kim@unsw.edu.au	Quad 2064	9385 2647

He is responsible for the lectures and related teaching and learning, as well as the administration and final assessment of the course.

Communication with Staff
Changki will normally be available for consultation on Mondays during teaching session from 3:30pm to 4:50pm in Quad 2064. For other times, appointments should normally be made in advance using email.

If students have questions about the material covered in lectures then consult the Course Lecturer. For administrative matters related to the course including enrolment, tutorial enrolment, assessment, special consideration, and the course web site, students should consult the Course Coordinator or the School Administrator (Bindya Subba).

All non-academic queries should be addressed to:

Bindya Subba
Actuarial Studies Office
Quad 2058
Telephone: 9385 1886
Fax: 9385 1883
Email: b.subba@unsw.edu.au

2. COURSE DETAILS

2.1 Teaching Times and Locations

Lectures
This Course consists of a 3 hour lecture per week. For the 12 weeks of the session, this is a total of 36 hours of contact teaching.

The lectures are held on

Monday 6:00 pm – 9:00 pm ASB 115

Timetables and locations are correct at time of printing. A full timetable of lectures and topics is provided later in this Course study guide. Any alterations to the lecture times or locations will be advised in lectures and via the Course WebCT Vista site.

Students should consult the WebCT Vista site on a regular basis, since assignment questions and other course materials will be placed there.

2.2 Units of Credit

6

Parallel teaching in the course
Students enrolled in ACTL5109 must attend the postgraduate lectures.

2.3 Summary of Course

Course Description

The aim of this course is to introduce the mathematical and economic models of financial economics and highlight their application to asset-liability management for insurance, superannuation and funds management. Topics covered include; risk and utility; risk measures; mean variance models; factor models; asset liability models using portfolio selection models; equilibrium and arbitrage-free valuation; valuation of derivatives; term structure models; actuarial stochastic investment models and their application. The topics will be illustrated with applications to the valuation and risk management of insurance and superannuation contracts especially those with embedded options and financial guarantees.

The course corresponds to the actuarial professional subject CT8 Financial Economics. Students achieving Credit or higher grades will be recommended for exemption from the professional examination. Exemptions from professional actuarial examinations require above average performance in the equivalent University course.

This course, ACTL5109 Financial Economics for Insurance and Superannuation along with ACTL5108 Finance and Financial Reporting are recognised by the Society of Actuaries for Validation by Education Experience (VEE) for the Corporate Finance subject of the SoA. To receive credit for a subject, candidates will need a grade of CR or better in each of the associated UNSW courses.

2.4 Course Aims and Relationship to Other Courses

Course Aim

The aims of this course are to provide students with an understanding of:

- A coverage of the Core Technical requirements of Institute of Actuaries syllabus for the course CT8 Financial Economics.
- The asset and liability models underlying actuarial practice with an emphasis on the asset models based on financial economics and continuous and discrete time financial models.
- The different models used for modelling risk and portfolios of securities.
- The underlying concepts and techniques used in optimal portfolio construction.
- The underlying concepts and techniques used in modelling and pricing derivatives and applications to insurance and superannuation products.
- The underlying concepts and techniques used in modelling term structure and applications to insurance and superannuation products.

Course Aims of the Institute of Actuaries CT8 Financial Economics

1. Discuss the advantages and disadvantages of different measures of investment risk.
2. Describe and discuss the assumptions of mean-variance portfolio theory and its principal results.
3. Describe and discuss the properties of single and multifactor models of asset returns.
4. Describe asset pricing models, discussing the principal results and assumptions and limitations of such models.
5. Discuss the various forms of the Efficient Markets Hypothesis and discuss the evidence for and against the hypothesis.
6. Demonstrate a knowledge and understanding of stochastic models of the behaviour of security prices.
7. Define and apply the main concepts of Brownian motion (or Wiener processes).
8. Demonstrate a knowledge and understanding of the properties of option prices, valuation methods and hedging techniques.
9. Demonstrate a knowledge and understanding of the properties of option prices, valuation methods and hedging techniques including
   Binomial trees and lattices,
   Continuous time models,
   Partial differential equations,
   Martingale methods
   Standard models such as Black Scholes and Garman-Kohlhagen, and hedging techniques in the risk management of a portfolio of derivatives.
10. Demonstrate a knowledge and understanding of models of the term structure of interest rates including:
    Single factor binomial lattice models,
    Single factor continuous time models, and
    Vasicek, Cox-Ingersoll-Ross and Hull-White models for the term structure of interest rates.
11. Demonstrate a knowledge and understanding of Credit Risk including:
    Reduced form models, intensity-based models, Merton Model, two-state model, Jarrow-Lando-Turnbull model**.**

Relationship of this course to other course offerings

This course is an introduction to financial models and actuarial applications in insurance and superannuation. The assumed knowledge of the course is a good understanding of financial mathematics as covered in ACTL5102 Financial Mathematics (for Actuaries). Concepts in economics and finance and accounting are also assumed background knowledge. Consult the Course Coordinator if you do not have the required background.

Concepts covered in the course ACTL5103 Stochastic Models for Actuarial Applications are applied and further developed in this course particularly those for continuous time stochastic processes and time series models. This course covers the financial and asset modelling required as a foundation for actuarial practice. The course ACTL5106 Insurance Risk Models covers the insurance models and liability models required as a foundation for actuarial practice.

For students interested in further study in the Master of Actuarial Studies, the course ACTL5303 Asset Liability Management develops the models introduced in ACTL5109 Financial Economics for Insurance and Superannuation in greater depth and examines the application of the models in actuarial practice. ACTL5304 Risk Management Strategies provides a more in depth coverage of the financial and insurance markets and transactions that are used in practice and presents an applied perspective in insurance markets of many of the topics covered in ACTL5109. ACTL5302 Risk and Capital Management is a more advanced course covering the financial and insurance economics and applications underlying risk management.

Students should have a solid background in mathematics and are assumed to be able to use a computer to analyse financial problems. You should be able to use a word processing package (such as WORD) and a spreadsheet (such as EXCEL). Students should use whatever computer programs they are most familiar with in doing assignments and other assigned tasks.

2.5 Student Learning Outcomes

At the end of this course students should have:

1. Developed an understanding of models of portfolios and how portfolio selection models can be applied in insurance and superannuation,
2. Developed an understanding of models used for derivative valuation and risk management and how these are applied in insurance and superannuation,
3. Developed an understanding of term structure models and how these are applied in insurance and superannuation,
4. Developed basic presentation and discussion skills for explaining probability and statistics problems in simple terms,
5. Increased knowledge of how to locate and evaluate the research literature on current developments in financial economics and actuarial applications during the group project,
6. Further developed problem solving skills using financial economics and basic applications in asset and liability modelling,
7. Further developed presentation and discussion skills for explaining financial economics concepts and basic applications in asset and liability modelling.

Graduate Attributes

Course Learning Outcomes	**ASB Graduate Attributes**
1, 2, 3	1. Critical thinking and problem solving
4	2. Communication
5	3. Teamwork and leadership
5	4. Social, ethical and global perspectives
6	5. In-depth engagement with relevant disciplinary knowledge
7	6. Professional skills

3. LEARNING AND TEACHING ACTIVITIES

3.1 Approach to Learning and Teaching in the Course

In this course we will take an active learning approach that stresses interactive teaching and learning. We look for active student contributions through discussion and questioning that reflects reading and experience. We expect students to come and be prepared for each lecture and tutorial class. To prepare for the course, each week students must:

- Prepare yourself through the weekly readings
- Work through the questions and exercises in the tutorial classes
- Download the weekly lecture notes/tutorials from the course website
- Be ready to participate in the class discussions, group work and activities
- Use consultation hours
- Prepare and hand in timely the main assignment
- Prepare class quizzes and final exam

3.2 Learning Activities and Teaching Strategies

Learning Activities

The course textbooks, lectures and assessment tasks are designed to provide a framework for your learning. Every student has a different approach to learning. How much time you spend on reading in preparation for lectures, completing assessment tasks, reviewing course objectives, deepening your understanding and preparing for final examinations will depend on your learning approach. Lectures will generally cover the main concepts and issues and will not necessarily cover all the details of the course readings or texts. It is expected that you have read the reading material for the lecture in advance. Students who are successful in this course take an active approach to learning.

Teaching Strategies

Lectures will cover the main topics and provide coverage of the course concepts. They are an opportunity for students to develop an understanding of the main topics covered in the course and the level of knowledge expected. They provide a guide to the course of study during the session and what material students need to read and review. Students will need to read the prescribed readings prior to the lecture.

4. ASSESSMENT

4.1 Formal Requirements

In order to pass the course students must complete and submit all components of assessment on or before the due date. Late assessment submissions will not be marked. It is important that students be punctual and reliable when submitting an assessment. This is an important workplace requirement and students need to ensure they meet deadlines.

In order to pass this course, you must:

- achieve a composite mark of at least 50; and
- make a satisfactory attempt at all assessment tasks (see below).

4.2 Assessment Details

The following table gives the relative weighting of the assessment components:

Assessment Task	Weighting	Learning Outcomes assessed	ASB Graduate Attributes assessed	Length	Due Date
1. Class Test 1	7.5%	1, 2, 3, 6, 7	1, 5	50 minutes	Week 4 (6pm Monday 10 Aug)
2. Class Test 2	7.5%	1, 2, 5, 6, 7	1, 5	50 minutes	Week 9 (6pm Monday 21 Sep)
3. Group Assignment	10%	1, 2, 3, 5, 6, 7	1, 2, 3, 4, 5, 6	5,000 words	Week 11, (6pm Tuesday 6 Oct)
4. Final Examination	75%	1, 2, 3, 4, 5, 6, 7	1, 5, 6	3 hours	Exam period

Class Tests

Technical skills are important in practice and this course provides foundation technical skills that will be useful throughout your working life (LO1 LO7, GA1).

Test 1 will cover Utility Theory, Mean Variance Analysis, and CAPM (LO1, LO2, LO3, LO6, GA1, GA5).

Test 2 will cover Models and Data, APT, Efficient Market Hypothesis, Measures of Investment Risk, and Derivative Securities (LO1, LO2, LO5, LO6, LO7, GA1, GA5).

In order to assess your understanding of the technical skills covered in the course aims there will be two 50-minute class tests during the session. The tests will be administered during lectures. Each test will be worth 7.5% of the total assessment for the course. The test will be closed book. Students will only be allowed to bring the text "Formulae and Tables for Actuarial Examinations" into the tests.

Normal examination rules apply to the conduct of class tests. Calculators will be allowed in the class tests and the final examination but a clear indication of all of the steps involved in your calculations must be shown. The university will not supply calculators to students for use in examinations where the provision of calculators has not been requested by the course examiner. It is the student's responsibility to be familiar with the rules governing the conduct of examinations.

Group Assignments

The practical application of the course concepts based on actual financial market problems is an important graduate attribute that employers require and this course aims to provide at least some introductory exposure to this. Writing skills for technical material are also important (LO1, LO2, LO3, LO6, GA1, GA2).

There will be one major Group Assignment for this course involving the practical application of course concepts to a financial market problem. This will provide students with an opportunity to also develop writing skills and group working. It will cover valuation of derivative securities in incomplete market, Investment strategies, stochastic pricing of unit-linked insurances, risk management strategies in insurance business, and profit testing (LO1, LO2, LO3, LO5, GA4, GA5 GA6).

The assignments you submit must be your own work. The assignments will be assessed on both technical accuracy, practical application and how well it is written and the quality of the assignment presentation.

Final Examination
The final examination will assess student's understanding of the concepts covered in the course and their ability to apply them to financial market problems. It will cover all of the lecture materials and the assignment contents (LO1, LO2, LO3, LO4, LO5, LO6, LO7, GA1, GA5, GA6).

The final examination will be a three-hour written paper. The final examination will be closed book. Students will only be allowed to bring the text "Formulae and Tables for Actuarial Examinations" into the exam.

4.3 Assessment Format
Details of format for submission of assignments are included with the assignment and available from the course web site.

4.4 Assignment Submission Procedure
Assignments must be placed in the box provided outside Quad 2059, Level 2 Quadrangle Building, near the Actuarial Studies Office. A cover sheet must accompany these assignments. A copy of the cover sheet is available from the course WebCT site. Additional copies of the cover sheet can be obtained outside Quad 2059. Please note that it is School policy that late assignments will not be marked.

4.5 Late Submission
The School of Actuarial Studies has a policy of grading late assignments with a zero mark. Punctual submission of work is required in order to satisfy the requirements of the course. The assignment may be marked at the discretion of the course co-ordinator if there is a valid reason for late submission and used in cases where your final overall results are marginal.

5. Academic Honesty and Plagiarism

The University regards plagiarism as a form of academic misconduct, and has very strict rules regarding plagiarism. For UNSW policies, penalties, and information to help you avoid plagiarism see: http://www.lc.unsw.edu.au/plagiarism/index.html as well as the guidelines in the online ELISE tutorial for all new UNSW students:

http://info.library.unsw.edu.au/skills/tutorials/InfoSkills/index.htm.

Plagiarism is the presentation of the thoughts or work of another as one's own.* Examples include:

- Direct duplication of the thoughts or work of another, including by copying work, or knowingly permitting it to be copied. This includes copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;
- Paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- Piecing together sections of the work of others into a new whole;
- Presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and,
- Claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

Submitting an assessment item that has already been submitted for academic credit elsewhere may also be considered plagiarism.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

Students are reminded of their Rights and Responsibilities in respect of plagiarism, as set out in the University Undergraduate and Postgraduate Handbooks, and are encouraged to seek advice from academic staff whenever necessary to ensure they avoid plagiarism in all its forms.

The Learning Centre website is the central University online resource for staff and student information on plagiarism and academic honesty. It can be located at:

www.lc.unsw.edu.au/plagiarism

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- Correct referencing practices;
- Paraphrasing, summarising, essay writing, and time management;
- Appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

† Adapted with kind permission from the University of Melbourne.

To see if you understand plagiarism, do this short quiz:
http://www.lc.unsw.edu.au/plagiarism/plagquiz.html

For information on how to acknowledge your sources and reference correctly, see:
http://www.lc.unsw.edu.au/onlib/ref.html

For the ASB Harvard Referencing Guide, see:
http://wwwdocs.fce.unsw.edu.au/fce/EDU/harvard_ref_guide.pdf

6. COURSE RESOURCES

Textbooks
The textbooks for the course are:

- Luenberger, D.G. Investment Science, Oxford University Press, 1998.
- Baxter, M. and A. Rennie. Financial Calculus. Cambridge University Press, 1996.

Reference Books - Recommended

- Cairns, A. Interest Rate Models, Princeton University Press, 2004
- Elton, E., M.Gruber., S.Brown., and W.Goetzmann., Modern Portfolio Theory and Investment Analysis, Wiley 2002 (6th Edition).

Other References
The following reference is useful as additional reading to support the course topics.

- The Actuarial Education Company, Course CT8 Study Guide.

Formulae and Tables
Students will only be allowed to bring into the examinations for the Actuarial courses in the Master of Actuarial Studies the text "Formulae and Tables for Actuarial Examinations". This text must not be annotated. All students in the actuarial courses should purchase a copy of this text if they wish to use this in the final examinations for this course. The text is available from the UK Institute of Actuaries or from ActEd Australia. Visit the ActEd website at http://www.acted.com.au.

Software
The Faculty of Commerce Computing Labs have available the statistical software MINITAB, SAS and the MATLAB (Statistics Toolbox) for use in this course. Excel can be used to carry out most assessment tasks in the course. Students can purchase a full version of the MINITAB and MATLAB software for their own computers at a student price from the UNSW bookshop.

Course WebCT
This course will use WebCT Vista for communication with students.

The WebCT Vista site for this course will contain the course outline, lecture notes, homework and tutorial exercises, assessment information, and any notices relevant to this course. It is important that you visit the site regularly to see any notices posted there by the course coordinator. The site can be accessed from the WebCT Vista log-in page at: http://vista.elearning.unsw.edu.au/.

7. COURSE EVALUATION AND DEVELOPMENT

Each course in actuarial studies at UNSW is reviewed each session by the course co-ordinator using student evaluative feedback from UNSW's Course and Teaching Evaluation and Improvement (CATEI) Process. Student feedback is taken seriously, and continual improvements are made to the course based on such feedback. Significant changes to the course are communicated to students taking the course. Your input into improving future offerings of the course is highly valued.

As a result of the previous evaluation of the course planned improvements for this offering were to review the functioning of tutorials and to improve the feedback given to students for assessment tasks. For tutorials it was considered necessary to ensure time limits on student presentations were strictly adhered to so that there was sufficient time for discussion of more difficult problems in the tutorial. Tutors will also be required to provide students with more feedback on assessment tasks.

8. STUDENT RESPONSIBILITIES AND CONDUCT

Students are expected to be familiar with and adhere to university policies in relation to class attendance and general conduct and behaviour, including maintaining a safe, respectful environment; and to understand their obligations in relation to workload, assessment and keeping informed.

Information and policies on these topics can be found in the 'A-Z Student Guide': https://my.unsw.edu.au/student/atoz/ABC.html. See especially, information on 'Attendance and Absence', 'Academic Misconduct', 'Assessment Information', 'Examinations', 'Special Consideration', 'Student Responsibilities', 'Workload' and policies such as 'Occupational Health and Safety'.

8.1 Workload

It is expected that you will spend at least **ten hours** per week studying this course. This time should be made up of reading, research, working on exercises and problems, and attending classes. In periods where you need to complete assignments or prepare for examinations, the workload may be greater.

Over-commitment has been a cause of failure for many students. You should take the required workload into account when planning how to balance study with employment and other activities.

8.2 Attendance

Your regular and punctual attendance at lectures and seminars is expected in this course. University regulations indicate that if students attend less than eighty per cent of scheduled classes they may be refused final assessment.

8.3 Special Consideration and Supplementary Examinations

UNSW policy and process for Special Consideration applies (see https://my.unsw.edu.au/student/atoz/SpecialConsideration.html). Specifically:

- Applications for special consideration (including supplementary examinations) must go through UNSW Central administration (within 3 working days of the assessment to which it refers) – applications will not be accepted by teaching staff;
- Applying for special consideration does not automatically mean that you will be granted additional assessment or that you will be awarded an amended result;
- If you are making an application for special consideration (through UNSW Central Administration) please notify your Course Coordinator or Lecturer in Charge;
- Please note: a register of applications for Special Consideration is maintained. History of previous applications for Special Consideration is taken into account when considering each case.

Students who believe that their performance in this course, either during session or in an examination, has been adversely affected by sickness, misadventure or other circumstances beyond their control may apply for special consideration for affected assessments. See the University web site for more details:

http://www.student.unsw.edu.au/atoz/atoz-Special.shtml

Students may be required to sit for an oral or written supplementary examination. Any supplementary examination date will be advised to students after the final examination. In general, a supplementary examination will only be offered to a student who has been prevented from taking the Final Examination, who has been placed at a serious disadvantage during the examination, and whose circumstances have improved considerably in the period since the relevant examination was held. Failure to attend a supplementary examination, if you have been granted one, will result in forfeiture of any additional assessment granted to you. Satisfactory performance in any course assessment is required in order to be granted a supplementary examination.

STUDENTS SHOULD NOTE THAT SPECIAL CONSIDERATION WILL NOT BE GRANTED UNLESS PERFORMANCE AND ATTENDANCE AT LECTURES IS SATISFACTORY. THIS WILL USUALLY MEAN THAT YOU WILL HAVE TO PASS ALL ASSESSMENT TASKS IN ORDER FOR ANY SPECIAL CONSIDERATION TO BE GIVEN.

The 'ASB Policy and Process for Special Consideration and Supplementary Exams in Undergraduate Courses' is available at:
http://wwwdocs.fce.unsw.edu.au/fce/current/StudentSuppExamProcedure.pdf .

Further information for undergraduate students is on the ASB website (see 'Policies and Guidelines for Current Students').

Consideration for Missed Assessments (other than final examination)
If you miss a test or are unable to submit your assignment by the due time & date, and you have a valid reason, you need to inform the Actuarial Studies office as soon as possible. You must provide written documentation requesting consideration to the Actuarial Studies office, in the form of a letter explaining your reasons with evidence attached, i.e. medical certificate, police report etc. You should note the course details, your student ID and contact details in your letter as well. As per University rules these considerations must be submitted within 3 working days of the assessment date. If no request is received or it is received after 3 working days you will be awarded a zero mark for that assessment

Review of Results of Assessments (other than final examination)
As per University rules, if you wish a piece of course assessment to be re-checked, for addition error or incorrect marking, you need to contact the Actuarial Studies office within 15 working days of the assessment being available for collection. You will need to bring in the assessment and provide a note as to the error or reason for review to the Actuarial Studies office. The assessment will be passed onto the relevant academic for review. Students will be able to collect back the assessment from the Actuarial Studies office.

8.4 General Conduct and Behaviour
You are expected to conduct yourself with consideration and respect for the needs of your fellow students and teaching staff. Conduct which unduly disrupts or interferes with a class, such as ringing or talking on mobile phones, is not acceptable and students may be asked to leave the class. More information on student conduct is available at www.my.unsw.edu.au.

8.5 Occupational Health and Safety

UNSW Policy requires each person to work safely and responsibly, in order to avoid personal injury and to protect the safety of others. For more information, see: https://my.unsw.edu.au/student/atoz/OccupationalHealth.html.

8.6 Keeping Informed

You should take note of all announcements made in lectures, tutorials or on the course web site. From time to time, the University will send important announcements to your university e-mail address without providing you with a paper copy. You will be deemed to have received this information. It is also your responsibility to keep the University informed of all changes to your contact details.

9. ADDITIONAL STUDENT RESOURCES AND SUPPORT

The University and the ASB provide a wide range of support services for students, including:

- **ASB Education Development Unit (EDU)** (www.business.unsw.edu.au/edu)
  Academic writing, study skills and maths support specifically for ASB students. Services include workshops, online and printed resources, and individual consultations. EDU Office: Room GO7, Ground Floor, ASB Building (opposite Student Centre); Ph: 9385 5584; Email: edu@unsw.edu.au.
- **Capturing the Student Voice**: An ASB website enabling students to comment on any aspect of their learning experience in the ASB. To find out more, go to http://tinyurl.com/ASBStudentVoice.
- **UNSW Learning Centre** (www.lc.unsw.edu.au)
  Academic skills support services, including workshops and resources, for all UNSW students. See website for details.
- **Library training and search support services:** http://info.library.unsw.edu.au.
- **UNSW IT Service Desk:** Technical support for problems logging in to websites, downloading documents etc. Library, Level 2; Ph: 9385 1333.
  Website: www.its.unsw.edu.au/support/support_home.html.
- **UNSW Counselling Service** (http://www.counselling.unsw.edu.au)
  Free, confidential service for problems of a personal or academic nature; and workshops on study issues such as 'Coping with Stress' and 'Procrastination'. Office: Level 2, Quadrangle East Wing; Ph: 9385 5418.
- **Student Equity & Disabilities Unit (**http://www.studentequity.unsw.edu.au)
  Advice regarding equity and diversity issues, and support for students who have a disability or disadvantage that interferes with their learning. Office: Ground Floor, John Goodsell Building; Ph: 9385 4734.

10. COURSE SCHEDULE

References:
DL – Luenberger,D.G. Investment Science, Oxford University Press, 1998.
BR – Baxter, M. and A. Rennie. Financial Calculus. Cambridge University Press 1996

Week Number	Lecture Tuesdays	Topic Covered	Assessment
1	20 July	Introduction; Utility Theory, Preferences, Mean Variance Analysis DL: Chapter 9, Lecture notes	
2	27 July	Mean Variance Analysis, Measures of Investment Risk DL: Chapter 6	
3	3 August	CAPM DL: Chapter 7	
4	10 August	Models and Data; APT DL: Chapter 8	**Quiz 1** (6pm Monday 10 Aug)
5	17 August	APT, Efficient Market Hypothesis; Investment Return Models DL: Chapter 8, Lecture Notes	
6	24 August	Introduction to Derivative Securities DL: Chapter 12, BR: Chapter 1	
7	31 August	Valuation of Derivative Securities – Discrete Time DL: Chapter 12, BR: Chapter 2	
Mid-Session RECESS (5 Sep - 13 Sep)			
8	14 September	Valuation of Derivative Securities – Continuous Time DL: Chapter 13, BR: Chapter 3	
9	21 September	Valuation of Derivative Securities – Continuous Time DL: Chapter 13, BR: Chapter 3	**Quiz 2** (6pm Monday 21 Sep)
10	28 September	Black Scholes Model DL: Chapter 13, BR: Chapter 3	
11	5 October	**Public Holiday**	**Group Assignment Due** (6pm Tuesday 6 Oct)
12	12 October	Term Structure Models DL: Chapter 14, BR: Chapter 4	
13	19 October	Term Structure Models, Credit Risks, DL: Chapter 14, BR: Chapter 4, Lecture notes	

This timetable may change. Revisions will be advised as they occur through the course web site.