

THE UNIVERSITY OF
NEW SOUTH WALES



**The Australian School of Business
School of Banking and Finance**

**FINS 5535
DERIVATIVE SECURITIES AND RISK MANAGEMENT TECHNIQUES**

**COURSE OUTLINE
SESSION 1, 2009**

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1. COURSE STAFF

Lecturers	Office	Telephone	E-mail
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Dr. David Colwell	ASB 367	9385-5851	D.Colwell@unsw.edu.au
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The lecturer is located in the East Wing of the ASB Building.
Consultation time: TBA.

1.1 Communication with Staff

The preferred communication with the course coordinator is via email. Please use the UNSW provided student email address.

2. INFORMATION ABOUT THE COURSE

2.1 Teaching Time and Locations

Wednesday	14:00 – 17:00	CLB 4.
Wednesday	18:00 – 21:00	Red Centre M032.

You must follow the course schedule as outlined in section 9 of this document. Additional tasks may be assigned and the applicable details will be posted on WebCT.

2.2 Units of Credit

This course has six units of credit and three contact hours per week.

2.3 Relationship of this course with other course offerings

This course is introductory in nature. It does, however, assume a working knowledge of finance concepts, including time value of money, and of higher mathematics, including probability distribution and calculus. There is some overlap with material discussed in Security Valuation, though the course will explore these topics in much greater depth. Students interested in Interest Rate Derivatives or Applied Portfolio Management will benefit from concepts explained in FINS5535.

2.4 Assumed Knowledge

Participants need to be able to use a word processing package (such as WORD) and a spreadsheet (such as EXCEL). It requires some knowledge of the financial markets and various approaches to solving problems normally encountered in that discipline. Some quantitative skill such as basic mathematical ability in dealing with algebraic manipulation is expected.

3. COURSE AIMS AND OUTCOMES

3.1 Course Aims

This course provides both introductory theory and a working knowledge of futures, options, and swaps, with an emphasis on the use of derivatives in risk management. The theory component is important, as with the rapid expansion of different derivative types we must know the fundamental pricing principle. The working knowledge component will cover the main types of derivatives contracts and valuation techniques. This subject is both theoretical and practical; the emphasis will be on problem solving.

3.2 Student Learning Outcomes

By the end of this course you will have a working knowledge of:

- a. Trading in different derivatives e.g. options and swaps,
- b. Principles of valuation of such products,
- c. Difference between discrete time and continuous time valuation principles,
- d. How to use such products for managing portfolio risks.

3.3 Approaches to Learning and Teaching

Before we elaborate on this item, we would like to draw students' attention to the following statement by Leland Stanford (1891), the founder of Stanford University:

“Students, all that we can do for you is to place the opportunities within your reach; it rests with you to grasp and improve them.”

This statement is true even today. In this course we attempt to make the topics practically relevant for a fast moving financial markets and products. In order to achieve this, the strategy would be:

- a. Active class participation and students are encouraged to bring in the class relevant topics to be discussed,
- b. Exercises and examples are selected such that these represent typical real problem,
- c. Pre-reading the topics: Although the students may not understand all the concepts in the lecture topics for the week, the familiarity with the subject matter helps progress faster in the class,
- d. Since the focus is on practical application of derivative securities, we will attempt to solve several problems during each lecture hours,
- e. The assignments would require the students to deal with problems that would require the use of experience, skills, and knowledge developed during the classes as the session progresses.

3.4 Teaching Strategies

The primary source for teaching material in this subject is the textbook. The chapters and/or section numbers to be covered in this course are identified later in this document. The instructors will explain the relevant concepts in the class and where appropriate will use exercises/problems from the textbook to illustrate the points. Additional problems from the text will be recommended for practice. Depending on the topic being covered any relevant current issues may also be discussed in the class.

The instructors may use slides in the lectures. The author of the text book provides these slides via the author's website (details given in textbook). It may be appropriate sometime for the instructors to provide additional material via the course webpage.

For the second half of the course the instructor will use his own slides. These slides will be available on WebCT.

Students are strongly encouraged to read the topics before attending the lectures. This subject is very analytical and there are many new concepts to be understood. It will be difficult to grasp all the underlying principles without preparation. The second half of this course, in particular, requires use of calculus. Instructors will assume that the students have such knowledge. If any student(s) feel that they should revise these concepts, then they should do so prior to attending the lectures to get the most out of the lectures.

Finally, it should be realized that attendance in class lectures is extremely important. If you miss a lecture, it is your responsibility to prepare the topic yourself. You cannot use the consultation time to have a private tuition for the missed lecture.

4. CONTINUAL COURSE EVALUATION AND IMPROVEMENT

UNSW Course and Teaching Evaluation and Improvement (CATEI) Process (http://www.ltu.unsw.edu.au/ref4-5-1_catei_process.cfm) is one of the ways in which student evaluative feedback is gathered. Significant changes to courses and programs within the School are communicated to subsequent cohorts of students.

This course is offered in this format since beginning 2007 and some of the suggestions made by students in earlier session have already been incorporated. These related to mainly the variety of quiz tasks performed in the labs for assessment.

In this course the students would be asked to complete this feedback process in last week either on-line or in hard-copy form at the end of the session.

5. LEARNING ASSESSMENT

5.1 Formal Requirement

To pass this course you must:

- Achieve a composite mark of at least 50, and,
- Make a satisfactory attempt at all assessment tasks.

5.2 Assessment Details

There are three components of the assessment process in this course. These are aimed at individual as well as group performances. The components have been designed to make the students feel and become confident about solving problems in real life situations in the financial market related industries.

As part of the formal feedback, the test/quiz solutions will be discussed in the class in the week following the test/quiz or provided via the course webpage. Of course, the student will receive regular feedback during the class as the session progresses.

The weighting of the assessment components are:

- | | |
|---------------------|-------------------|
| ▪ Quiz/test | 40% (Lecture 06) |
| ▪ Final examination | 45% |
| ▪ Assignment | 15% (9 June, 6pm) |

5.3 Assignment Format

This will be described on the WebCT under the assignment segments. The assignment is almost solely based on material from the second half of the course, and so will **only be made available during the last three weeks of session**.

5.4 Assignment Submission Procedure

Assignment files(s) names must have standardised naming conventions. The suggested naming convention is as follows: zXXXXXXXX_Fins5535_Assign. Replace XXXXXXXX by your student number.

5.5 Late Submission

Late submission of assignment in this course will not be accepted. This will help meeting all the results submission deadlines.

5.6 Special Consideration and Supplementary Examination

UNSW policy in this regard may be found at:

<https://my.unsw.edu.au/student/atoz/SpecialConsideration.html>

6. ACADEMIC HONESTY AND PLAGIARISM

The University regards plagiarism as a form of academic misconduct, and has very strict rules regarding plagiarism. For full information regarding policies, penalties and information to help you avoid plagiarism see: <http://www.lc.unsw.edu.au/plagiarism/index.html>

7. STUDENT RESPONSIBILITIES AND CONDUCT

7.1 Workload

It may be necessary to devote about ten hours per week for this course including the class attendances. Depending on the level of skill acquired in other courses and the items described under assumed knowledge before, this time may vary. The issues of advanced financial model building in the given software environment require multi-disciplinary approach and thinking. Thus the time needed to grasp all the details of this course will vary between individuals.

It is the students' responsibility to balance the time commitment to this course with other activities.

7.2 Attendance

The student should attend all lectures. The information that flows in the class during as well as during interactive discussions is vital to the understanding of the concepts of this course.

7.3 General Conduct and Behaviour

You should familiarize yourself with the relevant guidelines at www.my.unsw.edu.au.

7.4 Keeping Informed

You should pay attention to all announcements in the class and check regularly the course web page on WebCT (<http://webct.edtec.unsw.edu.au>). Any major announcement would be posted on the homepage of the course web page on WebCT.

It may be necessary at times to send email to all students enrolled in the course. We will use the UNSW provided student email address and NOT any other personal email addresses. It is the student's responsibility to check this email regularly.

8. STUDENT RESOURCES

8.1 Course Resources

Required Textbook:

"Options, Futures and Other Derivative Securities 7th Ed.", John C. Hull, Prentice Hall, 2008, ISBN-13: 978-0-13-601586-4.

8.2 Other Resources, Support and Information

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

Learning and study support

FCE Education Development Unit (<http://education.fce.unsw.edu.au>)

UNSW Learning Centre (<http://www.lc.unsw.edu.au>)

EdTec – WebCT information (<http://www.edtec.unsw.edu.au>)

Counselling support - <http://www.counselling.unsw.edu.au>

Library training and support services - <http://info.library.unsw.edu.au>

Disability Support Services – Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the Course Coordinator or the Equity Officer

(<http://www.equity.unsw.edu.au/disabil.html>). Early notification is essential to enable any necessary adjustments to be made.

In addition, it is important that all students are familiar with University policies and procedures in relation to such issues as:

Examination procedures and advice concerning illness or misadventure
<https://my.unsw.edu.au/student/academiclife/assessment/examinations/examinationrules.html>

Occupational Health and Safety policies and student responsibilities;
<http://www.riskman.unsw.edu.au/ohs/Policies%20&%20Procedures/UNSW%20OHS%20Accountability.pdf>

8.3 Calculators in exams

In October 2007 the Deputy Vice-Chancellor (Academic) approved a change to examination procedures which means that as from the Summer 2009 teaching period, UNSW will no longer provide calculators to students for use in examinations.

Where a calculator is required in an examination, students will need to provide their own 'approved' calculator.

Any calculator used in an exam must clearly display a UNSW 'approved calculator' sticker, available from School and/or Faculty Student Centres. Calculators without a UNSW 'approved calculator' sticker in an exam will be confiscated. For a limited transition period, a replacement calculator (Casio fx-911W) will be provided in such cases.

The list of calculators approved for use in exams at UNSW is updated frequently, the current list is displayed below.

If you have a calculator which meets eligibility criteria for use in an exam but is not included on the list contact your School or Faculty Student Centre.

Calculators approved for use in examinations at UNSW

CANON	F720	F720I			
CASIO	fx-82AU	fx-82AU PLUS	fx-82MS	fx-82NASER	fx-82TL
	fx-83WA	fx-85MS	fx-85WA	fx-95MS	fx100AU
	fx-100S	fx-115WA	fx-350MS	fx-350TL	fx-570AD
	fx-580	fx-901	fx-911W	fx-911Z	fx-992S
CITIZEN	SR-135	SR-260			
HEWLETT PACKARD	HP8S	HP10S	HP12S		

OFFICE ONE	720	3000
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SHARP	EL-509R	EL-509V	EL-520VA	EL-502WG	EL-W531HA
	EL-531LH	EL-531RH	EL-531VH	EL-531WH	

TEXAS INSTRUMENTS	BA-11 Plus	BA-11 Plus Pro	BA-35		
	TI-30Xa	TI-30X 11B	TI-30X 11S	TI-30X Multiview XB	TI-30X Multiview XS

TEXET	Albert 2 (YX890)	Albert 3 (TX895)	Albert 5 (TX842)
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Last updated: 18 December 2008

9. COURSE SCHEDULE

The reference to the chapters in the table below is with respect to the required textbook described before. Any additional notes will be provided via the course webpage on WebCT. For some lectures it may be necessary to download data from the course webpage. Note that there are two lectures per week.

Lecture Dates	Topic/Learning Outcome
Lecture 01 11 Mar	Fundamentals of Forwards and Futures (Ch. 1, and 2)
Lecture 02 18 Mar	Pricing Futures; Hedging with Futures (Ch. 3, and 5)
Lecture 03 25 Mar	Currency Swaps (Ch. 7, sections 7.8 and 7.9), Fundamentals of Options (Ch. 8, and 9)
Lecture 04 1 Apr	Option Trading Strategies (Ch. 10)
Lecture 05 8 Apr	Binomial Option Pricing Models (Ch. 11)
No lecture 15 Apr	Mid-session break
Lecture 06 22 Apr	Test (Covers all topics discussed in lectures so far)
Lecture 07 29 Apr	Wiener Processes & Ito's Lemma (Ch. 12)
Lecture 08 6 May	Black-Scholes Option Pricing Model (Ch. 13)
Lecture 09 13 May	Options on indices, currencies and futures (Ch. 15 and 16)
Lecture 10 20 May	The Greek Letters (Ch. 17)
Lecture 11 27 May	Numerical Procedures (Ch. 19)
Lecture 12 3 June	Exotic options (Ch. 24)