



FACULTY OF COMMERCE & ECONOMICS

OPTIONS, FUTURES AND RISK MANAGEMENT TECHNIQUES FINS3635

Course Outline – Session 2, 2003

Robert de Rozario

Objective

This course provides a rigorous introduction to the fundamental pricing principles and hedging techniques in the derivative markets, focusing on the main types of options and futures contracts. It is designed to acquaint the student with the tools that are necessary to analyze the common issues in the markets. The development of futures and options trading is also discussed. On completion, students will be able to understand the mechanics of trading, exercising, and settling the derivatives, price derivatives, and use derivatives to manage risk.

Prerequisites

Prerequisite is FINS 2624 Portfolio Management of Financial Assets. It is the responsibility of students to ensure that the prerequisite has been met before commencing this course.

Lecturer

Robert de Rozario (Lecturer-in-Charge/Tutor-in-Charge)
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Consultation Hours: To be announced in class and will be posted at office door.

Tutor

M. Loago (Second Tutor)
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Phone: 9385-
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E-mail: To be announced
Consultation Hours: To be announced in class and will be posted at office door.

Lecture Times

Tuesday 12:00-14:00 EE G24
Wednesday 10:00-12:00 QUAD 1027

Tutorial Times

T01a Tue 14:00 15:00 EE G24
T02a Tue 15:00 16:00 QUAD GO34
T03a Wed 12:00 13:00 QUAD 1027
T04a Wed 13:00 14:00 QUAD GO27
T05a Wed 15:00 16:00 QUAD GO31

Tutorial enrolment is done in the Faculty by the Tutorial Allocation System (TAS). If you have not entered your preferences into TAS, you will need to enrol in Week one.

Textbook

The required text is:

Options, Futures and Other Derivative Securities, by John C. Hull, 5th Ed., Prentice-Hall, 2003. In addition, lecture notes will be available at the school's web site. Further references are listed at the end of chapters in the text.

Assessment

Assessment is based on two examinations and two assignments (all components are compulsory), and the assessment scheme is as follows:

- Mid-Session Examination 40%
- Final Examination 50%
- Two Assignments 10% (5% each)

The Mid-session exam will be held in Week 7. The venue and time are to be announced in the class. If applicable, students should notify their employers of the requirement to attend examination. Failure to attend the examination does not automatically lead to reassessment. Students who fail to complete any component of the assessment will be awarded an unsatisfactory failure (UF). The only exception is for medical reasons, which must be supported by medical certificates.

Tutorial attendance is mandatory. Students failing to attend more than 80% of tutorials may be awarded an unsatisfactory failure (UF) overall at the discretion of the Lecturer in Charge and in accordance with university rules. In addition, students must participate during the tutorial to have been considered to have attended the tutorial. The manner in which this will be evaluated will be outlined in the first lecture and first tutorial class.

Special Consideration

Rules of special considerations are published on UNSW website student gateway and the School of Banking & Finance website. Attention is drawn to the following extract from the University of New South Wales Calendar "Procedures": "Students who believe that their performance in a subject, either during the session or in an examination, has been adversely affected by sickness or any other reason should inform the Registrar and apply for special consideration in the determination of their standing. The application must be made on the 'Application for Special Consideration' form available from the Student Centre. Such requests should be lodged as soon as is practical and in any event *no more than three days after the exam* for which special consideration is sought." A photocopy of all material supporting an application for special consideration, as lodged with the Registrar, must also be provided to the Lecturer-in-charge within seven days of any event for which special consideration is sought. For special consideration on medical ground, students must inform their doctors to post a copy of the results of any laboratory tests conducted to the lecturer-in-charge directly within seven days of their availability. Students must also inform their doctors that the lecturer-in-charge and/or the Examination Assessment Committee may approach them to discuss and learn about the medical condition in details.

Supplementary Examination

Students who apply for special consideration are advised that:

- an Assessment Committee decides on the granting of supplementary assessment,
- lodging of applications for special consideration does not guarantee that supplementary assessment will be granted and/or that a pass in the subject will be given,
- it is your responsibility to be available for supplementary assessment during the specified period (holiday plans are not sufficient reason for non-availability and no second supplementary examination will be supplied),
- it is your responsibility to inform the University Student Centre of any changes to your addresses and telephone numbers,
- if the supplementary assessment is granted, it is your responsibility to check the details of the supplementary examination such as time and venue,
- an oral component of up to 20% of the marks allocated to the related examination will be included in the supplementary assessment.

Academic Misconduct and plagiarism

Students are reminded that the University regards academic misconduct and plagiarism as a very serious matter. More information about misconduct and plagiarism can be found at the Faculty web site of

http://www.fce.unsw.edu.au/current_students/responsibilities.shtml#misconduct.

The following information is taken from p.23 of the Policy. Plagiarism entails taking and using as one's own, the thoughts or writings of another without acknowledgement including:

- (a) where paragraphs, sentences, a single sentence or significant part of a sentence which are copied directly, are not enclosed in quotation marks and appropriately footnoted;
- (b) where direct quotations are not used, but ideas or arguments are paraphrased or summarised, and the source of the material is not acknowledged either by footnoting or other reference within the text of the paper; and
- (c) where an idea, which appears elsewhere in print, film or electronic medium, is used or developed without reference being made to the author or the source of the idea.

Lecture Outline

Week 1

Introduction to Derivative Markets

Hull: Ch. 1, (parts of) 2

Week 2-3

Fundamentals of Futures

Mechanics of Futures Trading,

Settlement of a Futures Contract,

Determinants of Futures Prices,

Hedging with Futures

Hull: Ch. 2, 3, 4

Week 3-4

(... Continued) Hedging with Futures,
Risks Associated with Hedging,
Hedging Strategies
Hull: Ch.4

Week 4 - 5

Interest Rate Futures,
Term Structure of Interest Rates,
Hedging with Interest Rate Futures,
Swaps (Currency, Interest Rate)
Hull: Ch. 5, 6

Week 5 – 6

Fundamentals of Options,
Option Pricing Restrictions,
Arbitrage Relations Upper and
Lower Bounds for Option Prices,
Put-Call Parity,
Factors Effecting Prices,
Hull: Ch. 8
Assignment 1.

Week 7 Mid-Session Examination

(no lecture, material up to and including Week 6 is examinable)

Week 8 - 9

Trading Strategies Involving Options,
Strategies Involving a Single Option and a Stock,
Spreads, Combinations,
Binomial Option Pricing Model
Hull: Ch.9, 10

Week 9-10

Introduction to Basic Stochastic Calculus,
Stochastic Processes,
Modeling Behavior of Stock Price,
Ito's Lemma,
Black-Scholes Option Pricing Model,
Estimating Volatility of Stock,
Alternative Models for Stock Options,
Hull: Ch.11, 12

Week 11

Options on Stock Indices, Currencies,
and Futures,
Specification of Contracts,
Black's Model,
Advanced Binomial Pricing
Hull: Ch. 10, 13
Assignment 2

Week 13

Measuring Market Risks (VaR),
Management of Market Risk,
Evaluating Price Sensitivities,
Hedging with Options,
Hull: Ch. 14, 16

Week 14

An Advanced Topic in Option Pricing
(not examinable),
Practical Implementation of Derivative Pricing Models
(not examinable),
Computational Issues,
(not examinable),
Revision For Final.

General Comments

Students taking this course require a high degree of mathematical aptitude. The maths required will be explained in the context of the material covered, however, students weak in maths may struggle. Please see the Lecturer in Charge if you would like to discuss this or any other matters.

Robert de Rozario.