



# ACCG329 Security Pricing and Hedging Unit Outline<sup>†</sup>

Division of Economic and Financial Studies

Semester 1, 2006

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<sup>†</sup>ver: 1.1, February 28

# 1 Brief Description and Objectives

This unit explores the principles, theory and techniques of asset pricing. The first half of the unit focuses on portfolio analysis and multifactor models applicable to problems in investment analysis and asset allocation.

The second half of the unit focuses on pricing techniques driven by arbitrage arguments. Arbitrage or relative pricing arguments underpin powerful, robust methods for pricing derivative securities.

Upon successful completion of this unit you will:

1. understand the economic arguments underlying important asset pricing models
2. be able to apply the models to practical problems

# 2 Unit Pre-requisites

1. ACCG253 (P) or ACST200
2. ECON141 or STAT271

# 3 Lecturer in Charge

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# 4 Unit Administrator

Mr David Siu, Office: Office: E4A 219, Ph: 9850 9193, email: [dsiu@efs.mq.edu.au](mailto:dsiu@efs.mq.edu.au)

## 5 Prescribed Texts

**Modern Investment Theory** by Robert A. Haugen, 5th Edition, Prentice Hall, 2001. ISBN 0-13-019170-1.

**Options, Futures and Other Derivatives** by John Hull, 6th Edition, Prentice Hall, 2006. ISBN 0-13-197705-9.

## 6 Assessment

Your final grade will be determined by your performance in the mid-semester test and final exam as follows:

Assessment Weightings for Final Grading	
Tutorial Assignments	15%
Mid Semester Test	25%
Final Exam	60%

### TUTORIALS

1. Tutorial attendance is compulsory.
2. You are strongly advised to attempt all assigned tutorial questions before the weekly tutorial class, and before consulting the solutions. It is very easy to be lulled into a false sense of security by simply reading questions and looking at the solutions.
3. **Each week you are required to submit to your tutor your attempt at the questions marked with a star (\*). Submit the starred questions only.** These mini-assignments must be **submitted on time, in your assigned tutorial class.** Your assignment submission record will serve as a record of your attendance. Five of the submitted assignments, randomly selected, will be assigned a mark by your tutor. Your final tutorial mark will be the sum of the assignment marks. Assignments will be marked out of 3 for both effort and outcome. Here is the grading scale:

- (a) 3/3 is awarded for a complete, well-presented attempt. Answers should be substantially correct but need not be error free.
- (b) 2/3 is awarded for a complete, satisfactory attempt. Less than full marks are awarded due to a shortfall in the substance or presentation of the submitted work.
- (c) 1/3 is awarded for an incomplete or incoherent attempt. This mark may also be awarded if your answers are completely wrong or unsubstantiated.
- (d) 0/3 is awarded if you do not submit the questions on time in your assigned tutorial, or, if what you submit does not merit a mark

Solutions to starred questions will be made available in the week after they are due.

4. Questions with stars simply indicate that the questions are to be submitted to your tutor. In terms of content, they are no more or less important than the questions without stars. Stated differently, the presence or absence of stars should not be read as a signal of what will or won't be tested. Solutions to questions to all tutorial questions without stars will be provided at the beginning of the week in which they're due.

## **MID-SEMESTER TEST & FINAL EXAM**

A 90-minute mid-semester test based on the topics covered in lectures 1-5 (inclusive) will be held during the lecture time in week 7.

The final exam will be a three hour paper.

You must achieve a satisfactory level of performance in *both* the mid-semester test and the final exam to pass the unit.

Non-programmable calculators may be used in both the mid-semester test and final exam. You are not permitted to use dictionaries in either the test or final exam.

## 7 Lecture Topics, Reading and Tutorial Assignments

*IMPORTANT: If there are errors in the lecture notes or other documents (such as tutorial solutions or this unit outline) they will be fixed as soon as the relevant lecturer becomes aware of them. To prevent any confusion we will version number all documents. In this way you can periodically visit the web page to check if you have the latest version of any given document.*

**Week 1: Optimal Portfolio Choice: Estimation Issues** (*Week beginning February 27, 2006*)

*Reading:* Haugen: Chapters 1-5.

*Tutorial Questions due Week 2:* Ch 3, Question Set 1: Q 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15; Ch 4, Question Set 1: Q 2, 5\*, 6\*, 7\*, 11\*, 12\*, 13\*, & 14\*.

**Week 2: Optimal Portfolio Choice: Pragmatic Approaches and the CAPM** (*Week beginning March 6, 2006*)

*Reading:* Haugen Chapters: 5, 6 & 8.

*Tutorial Questions due Week 3:* Ch 5, Question Set 1: Q 3, 5, 7, 9, 12; Ch 6, Question Set 1: Q 1, 3, 4, 5, 6, 7, 8\*, 16\*, 25, 26; Ch 8, Question Set 1: Q 4\*, 5\*, 6\*, 7\*, 8, 9, 10, & 11.

**Week 3: The Arbitrage Pricing Theory** (*Week beginning March 13, 2006*)

*Reading:* Haugen Chapter 10

*Tutorial Questions due Week 4:* Ch 10, Question Set 1: Q 1, 2, 4, 5, 7\*, 8, 11\*, & 12.

**Week 4: Informational Efficiency** (*Week beginning March 20, 2006*)

*Reading:* Haugen Chapters: 9, 24, & 25

*Tutorial Questions due Week 5:* Ch 9, Question Set 1: Q 5, 6, 8, 10\*, 11; Ch 24, Question Set 1: Q 1, 2, 3, 9, 13\*; Ch 25, Question Set 1: Q 1\*, 2\*, 3\*, & 4.

**Week 5: Multifactor Pricing Models: Theory, Evidence & Applications** (*Week beginning March 27, 2006*)

*Reading:* Refer to lecture notes and additional reading

*Tutorial Questions due Week 6:* Refer to the lecture notes

**Week 6: Introduction to Derivatives** (*Week beginning April 3, 2006*)

*Reading:* Hull Chapters 1, 2 & 5

*Tutorial Questions due Week 8:* Hull: 1.2, 1.9, 1.17, 1.19, 1.21, 1.26\*, 2.12, 2.16, 2.24, 2.25, 2.26\*, 5.3, 5.4, 5.7, 5.9, 5.11, 5.18, 5.19, & 5.24\*.

**Week 7: Mid-Semester Test** (*Week beginning April 10, 2006*)

**No tutorials in week 7. The mid-semester test will be held this week. Most students will sit the test during the Tuesday 5-7pm lecture time on April 11. Some students may be required to sit the test at 7-9pm on the same night. We'll provide you with further information in lectures and on the web as the date approaches.**

**Mid-Semester Break** (*April 14-April 28, 2006*)

**Week 8: Pricing Forwards & Futures; Swaps** (*Week beginning May 1, 2006*)

*Reading:* Hull Chapters 3 & 7

*Tutorial Questions due Week 9:* Hull: 3.2, 3.4, 3.6, 3.7, 3.14, 3.17, 3.24\*, 7.1, 7.3, 7.5, 7.6, 7.7, 7.9, & 7.20\*.

**Week 9: Properties of Stock Options** (*Week beginning May 8, 2006*)

*Reading:* Hull Chapter 9

*Tutorial Questions due Week 10:* Hull: 9.3, 9.4, 9.6, 9.7, 9.11, 9.14, 9.22\*, & 9.25\*.

**Week 10: Binomial Option Pricing and Introduction to Continuous Time Processes** (*Week beginning May 15, 2006*)

*Reading:* Hull, Chapters 11 & 12

*Tutorial Questions due Week 11:* Hull: 11.2, 11.4, 11.8, 11.9, 11.11, 11.13, 11.19\*, 12.1, 12.3, & 12.12\*.

**Week 11: Black-Scholes-Merton & Extensions** (*Week beginning May 22, 2006*)

*Reading:* Hull, Chapters 13 & 14

*Tutorial Questions due Week 12:* Hull: 13.1, 13.2, 13.6, 13.8, 13.10, 13.18, 13.27\*, 13.29\*, 14.7, 14.9, 14.11, 14.20, 14.23, 14.41\*, & 14.43\*.

**Week 12: “The Greeks” and Value at Risk (VaR)** (*Week beginning May 29, 2006*)

*Reading:* Hull, Chapters 15 & 18 plus additional reading TBA.

*Tutorial Questions due Week 13:* Hull: 15.2, 15.3, 15.4, 15.5, 15.7, 15.12, 15.25\*, 18.1, 18.3, 18.4, 18.8, 18.9, & 18.17\*.

**Week 13: Revision** (*Week beginning June 5, 2006*)

**ABOUT LECTURES:** The weekly lecture is on Tuesday 5-7pm in Mason theatre, building E7B. Attendance at lectures is not compulsory, but highly recommended.

**LECTURE NOTES:** will be available on the web, prior to the lecture - usually the week before the lecture. Log in to the unit web page on WebCT from: <http://online.mq.edu.au> and check the page regularly for updates.

The lecture notes define the unit content; the textbooks should be viewed as a supplement to the lecture notes. As a general rule, if the textbook covers

material that is not mentioned in the lectures, it will only be examinable if it is covered in one of the assigned tutorial questions.

**ABOUT READINGS AND HOMEWORK:** Always check the lecture notes for additional reading or additional tutorial questions. The reading guide provided above is approximate: there may be material in some of the chapters that are not covered in the unit, or there may be material in lectures not covered in the book.

## 8 Regarding Special Consideration

Students requesting special consideration should acquaint themselves with: Bachelor Degree Rules 6(3) and 8 by reading the University Calendar or visiting the website at <http://www.cal.mq.edu.au/>