

School of Economics and Finance

## **MMAF 530 SPECIAL TOPIC: REAL OPTIONS**

Trimester Two 2009

### **COURSE OUTLINE**

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#### **Names and Contact Details**

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#### **Trimester Dates**

Teaching Period: Monday, July 13 to Friday, October 16

End of Year Study Period: Monday, October 19 to Monday, October 26

Examination Period: Tuesday, October 17 to Saturday, November 14

*Note: Students who enrol in courses with examinations should be able to attend an examination at the University at any time during the formal examination period.*

**Withdrawal dates:** Information available via

<http://www.victoria.ac.nz/home/admisenrol/payments/withdrawalsrefunds.aspx>

#### **Class Times and Room Numbers**

Lectures will be held on Wednesday in room G01 in Rutherford House from 1:40-3:30pm.

The lecture room is booked for three hours, but each lecture will normally only last two hours.

The course is co-taught with MOFI 410.

#### **Course Content**

Material will be drawn from the following list:

- The modelling framework
- Valuing single-period cash flows
- Valuing multi-period cash flows
- Combining valuation and decision making
- Options that do not affect the state of a project
- Simple timing options
- Compound timing options
- Uber-compound timing options
- Switching options
- Learning options
- Calibration using spot and futures price data
- Calibrating trees of alternative state variables

- Case study: Forestry management and valuation
- Case study: Developing a gas field

### **Course Learning Objectives**

By the end of this course, students should be able to:

- demonstrate an understanding of the real options approach to decision making
- estimate the values of the parameters needed to implement this approach
- identify the most important options embedded in a decision problem and represent them using a decision tree
- use dynamic programming and modern theories of asset valuation to derive an optimal decision rule
- interpret observed firm behaviour in terms of the real options embedded in decision problems
- communicate the results of real options analysis at a level that senior decision makers can understand

### **Course Delivery**

Course delivery takes the form of 12 approximately two-hour long lectures.

### **Expected Workload**

The total expected workload for MMAF 530 is 200 hours, comprising 16 hours per week.

### **Readings**

The textbook for the course is

- Guthrie, Graeme. 2009. *Real Options in Theory and Practice*, New York: Oxford University Press.

You will need to have access to a copy of the book for the course.

### **Materials and Equipment**

Non-programmable calculators will be allowed in the final examination.

### **Assessment Requirements**

The final grade will be determined by three assignments (contributing 40% in total) and a two-hour final exam (covering the whole course and contributing 60%).

The assignment due dates are

- Assignment 1 (8%): 1:40pm on Wednesday, August 5 (start of lecture 4).
- Assignment 2 (16%): 1:40pm on Wednesday, September 16 (start of lecture 8).
- Assignment 3 (16%): 1:40pm on Wednesday, October 14 (start of lecture 12).

*Note: Your assessed work may also be used for quality assurance purposes, such as to assess the level of achievement of learning objectives as required for accreditation and audit purposes. The findings may be used to inform changes aimed at improving the quality of FCA programmes. All material used for such processes will be treated as confidential, and the outcome will not affect your grade for the course.*

### **Examinations**

The final examination for this course will be scheduled at some time during the period from Tuesday 27 October to Saturday 14 November 2009.

**Penalties**

Assignments handed in late will not be marked. If a satisfactory medical certificate is provided, the weight from the assignment will be shifted onto the other pieces of assessment; otherwise, the assignment score will be recorded as 0.

**Mandatory Course Requirements**

A necessary condition for passing the course is that the score on the final exam is at least 50%.

**Communication of Additional Information**

Course documents and other information will be available on the course website at <http://blackboard.vuw.ac.nz>. Announcements will also be posted there.

**For the following important information, follow the links provided:**

Academic Integrity and Plagiarism

<http://www.victoria.ac.nz/home/study/plagiarism.aspx>

General University Policies and Statutes

<http://www.victoria.ac.nz/home/about/policy/academic.aspx>

Faculty of Commerce and Administration Offices

<http://www.victoria.ac.nz/fca/studenthelp/Contactus.aspx>

Manaaki Pihipihinga Programme

[http://www.victoria.ac.nz/st\\_services/mentoring/](http://www.victoria.ac.nz/st_services/mentoring/)