VICTORIA
UNIVERSITY OF WELLINGTON

School of Economics and Finance

ECON 434 ECONOMIC DYNAMICS

Trimester 1 2012

COURSE OUTLINE

Name and Contact Details

Lecturer: Jacek Krawczyk, RH325, phone 4635352
Contact by email preferred at: J.Krawczyk@vuw.ac.nz

Jacek Krawczyk has overall responsibility for the course. You should see him if you are having difficulties that you are unable to resolve or if you need to make special arrangements because of a disability, or if you want to appeal your assignment mark.

You can find Blackboard at `www.blackboard.vuw.ac.nz/` - if ECON 434 does not appear among your courses, please email Jacek Krawczyk immediately, with your SCS username.

Trimester Dates:

Monday 5 March to Wednesday 4 July 2012.

Teaching Period: Monday 5th March - Friday 8th June 2012
Study Period: Monday 11th June - Thursday 14th June 2012
Examination Period: Friday 15th June - Wednesday 4th July 2012 (inclusive)

Withdrawal from Courses:

1. Your fees will be refunded if you withdraw from this course on or before Friday 16 March 2012.

2. The standard last date for withdrawal from this course is Friday 18 May. After this date, students forced to withdraw by circumstances beyond their control must apply for permission on an 'Application for Associate Dean's Permission to Withdraw Late' including supporting documentation.

The application form is available from either of the Faculty's Student Customer Service Desks.

General information available via
`policy.vuw.ac.nz/Amphora!%7E%7Epolicy.vuw.ac.nz%7EPOLICY%7E000000001743.pdf`

Class Times and Room Numbers

Lecture times: CRN18673: Friday, 09:30-11:20; RWW 314

Consultation time: Wednesday, 14:10-15:00, RH325

Course content

The course topics are listed in the table below.

The following is the (tentative) lecture schedule. Numbers point to the textbook sections. Please prepare for each lecture by reading the indicated sections and familiarising yourself with the notation.

Lecture	Topic	Sections
1	Games in extensive form. Additional concepts about information. Games in normal form.	2.2.1-2.2.3; 2.3.1--2.3.5; 2.4.1-2.4.3
2	Concave m-person games	3.4.1-3.4.9
3	Repeating a game in normal form.	5.2.1-5.2.6
4	The folk theorem. Memory-strategy equilibria in a repeated concave game	5.3.1-5.3.2; 5.4.1--5.4.3
5	Multistage control systems.	6.1.1-6.1.4
6	Description of multistage games in a state-space. Information structure.	6.2 6.3
7	Strategies and equilibrium solutions.	6.4.1-6.4.4
8	A feedback-Nash equilibrium (FNE) solution to a fishery-management model.	6.5.1-6.5.3
9	FNE in infinite-horizon discounted games.	6.6.1-6.6.2
10	Linear-quadratic games.	6.7.1-6.7.3
11	Equilibria in a class of memory strategies for infinite-horizon games.	6.9.1-6.9.2
12	A macroeconomic problem modelled as a dynamic game.	$\mathbb{GE}$ 6.12

Course Learning Objectives

The main objective of this course is to teach economic dynamics in the context of conflicts and optimal control. The conflicts will be modelled as static and dynamic games.

Students passing this course should be able to

- solve simple static games;

- understand state-space models;

- build simple optimal-control type economic models;

- solve basic dynamic games.

Course Delivery

The course is delivered at RWW314 as a series of two 50 minute sessions held once a week for the duration of the trimester.

Expected Workload

As a guideline, students are expected to spend 8 hours a week on this course including class contact time. This may however vary considerably for individual students.

Group Work

N/A

Readings

The text for this course is:

- A. Haurie, J. B. Krawczyk & G. Zaccour "Games and dynamic games", (to be) published by World Scientific Publishing/Imperial College Press, 2012.

In case the book is not available on 5 March, the material necessary for each lecture will be provided on Blackboard. At present, the book contents and introductory chapters are available at `www.vuw.ac.nz/staff/jacek_krawczyk/Intro.html`.

Complementary books, which might provide useful alternative explanations and practice exercises, are:

- D. Luenberger. "Introduction to Dynamic Systems: Theory, Models and Applications".

- T. Başar and G. J. Olsder. "Dynamic Noncooperative Game Theory". 1995

- P. Whittle. "Optimal Control: Basics and Beyond". Closed Reserve.

- L. Ljungqvist & T.J. Sargent. "Recursive Macroeconomic Theory".

The VUW library has a web page that contains detailed information about available library resources. The key words for you to try are *game theory, dynamic games, optimal control*. The URL is `//www.vuw.ac.nz/library`.

Materials and Equipment

You do not need any special equipment for this course. All numerical examples provided at lectures as well as the questions to be answered in assignments can be answered on a sheet of paper and using a pen (through calculus and algebra). However, knowledge of (and access to) Matlab or Maple will be of help to manipulate some more complex formulae. In examinations, you are allowed to use non-programmable calculators.

Assessment Requirements

Your course mark will be a weighted average of two assignments: 14% & 16% and the final exam: 70%

Final examination is open book; all questions are compulsory.

- Two assignments will be issued approximately 10 days ahead of their respective deadlines: 25 May and 6 June. The assignments are to be handed in to lecturer or Bonnie Riley in RH321 by 1200 noon on each of the above dates.

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

Students who enrol in courses with examinations are obliged to attend an examination at the University at any time during the formal examination period.

The final examination for this course will be scheduled at some time during the period from Friday 15 June Wednesday 4 July (inclusive).

Penalties

Late assignments will be given a grade "0".

Mandatory course requirements

There are no mandatory requirements for this course.

Class representative

A class representative will be elected in the first class, and that person's name and contact details made available to VUWSA, the Course Coordinator and the class. The class representative provides a communication channel to liaise with the Course Coordinator on behalf of students.

Communication of additional information

Additional information will be conveyed to students via Blackboard and/or email.

Emails may be sent to the address that you supplied with your enrolment; but they may also be sent to your SCS email address, which is your official university email address. You should keep an eye on both email addresses.

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
Find key dates, explanations of grades and other useful information at
`http://www.victoria.ac.nz/home/study`

Find out about academic progress and restricted enrolment at
`http://www.victoria.ac.nz/home/study/academic-progress`

The University's statutes and policies are available at
`http://www.victoria.ac.nz/home/about/policy`,
except qualification statutes, which are available via the Calendar webpage at
`http://www.victoria.ac.nz/home.study/calendar` (See Section C)

Further information about the University's academic processes can be found on the website of the Assistance Vice-Chancellor (Academic) at
`http://www.victoria.ac.nz/home/about{_}victoria/avcacademic/default.aspx`

AVC (Academic)Website: information including: Conduct, Academic Grievances, Students with Impairments, Student Support
`http://www.victoria.ac.nz/home/about{_}victoria/avcacademic/Publications.aspx`

Faculty of Commerce and Administration Offices
`http://www.victoria.ac.nz/fca/studenthelp/`

Te Putahi Atawhai
Maori and Pacific Mentoring Programme
`http://www.victoria.ac.nz/tpa`