

School of Economics and Finance

ECON 301 ECONOMETRICS

Trimester 1, 2014

COURSE OUTLINE

Names and Contact Details

Course coordinator & lecturer: Prof. Dean Hyslop
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Office hours: Wednesday 12.30-2pm, or by appointment

Administrator: Alice Fong, RH 318, Ph. 463 5353
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Trimester Dates:

Teaching Period: Monday 3 March – Friday 6 June
Study Period: Monday 9 June – Thursday 12 June
Examination Period: Friday 13 June – Wednesday 2 July (inclusive)

Course Delivery

This course will be delivered by two lectures per week, and a tutorial/computer-lab in 8 of the 12 weeks.

Class Times and Room Numbers

Lectures:

Wednesday and Friday, 8.30–9.20am in **RWW 414**

Tutorials:

Friday 9.30–10.20am in **RWW402** (the Cybercommons in Railway West Wing).

The tutorials will be expected to occur in **weeks 2-4, 6, 8-11**, but will be confirmed as the course progresses. To access the student computer labs, you will need to set up your username and password with the Student Computer Services (SCS).

Mid-trimester test:

Wednesday 7th May, 5.40-6.30pm in **RHLT1** (50 minute test covering material from weeks 1–6).

Course Content

Econometrics is concerned with the construction, estimation, testing, and use of economic and financial models. Sound applied econometric work requires that careful attention be paid to econometric theory, as well as to the theory on which the empirical model is based and the construction of data. To understand econometrics, mathematical reasoning and theory is required. But since the ultimate goal is actual estimation and evaluation, hands-on experience with data and econometric software is also essential. For this purpose, the econometric software package R will be used: R is freeware, and can be downloaded from the following website: <http://www.r-project.org/>.

Introductory material covered in QUAN 201 will be reviewed and expanded into more advanced level, in terms of both the econometric theory and the level of complexity of the models. Advanced econometric topics to be covered in ECON301 will be selected from the following: generalized least squares, instrumental variables methods, stationary time series models, estimation of simultaneous equation systems, non-linear least squares, maximum likelihood estimation, models with limited dependent variables, and models with panel data. Furthermore:

- Matrix algebra specifications will be used. By using matrix algebra, many fundamental results in econometrics can be presented in an elegant and compact manner.
- Some computer programming will be used to complement the econometric theory, and enhance students' understanding of econometrics.

The course topics are as follows (with Wooldridge text references):

- Generalised least squares methods for Heteroskedasticity and Autocorrelation – chapter 8 (mainly 8.1-8.4) and chapter 12 (mainly 12.1-12.3)
- Instrumental variables methods – chapter 15 (mainly 15.1-15.5)
- Simultaneous equations systems – chapter 16 (mainly 16.1-16.3)
- Maximum likelihood estimation of non-linear models – appendix C (C.4)
- Binary choice and limited dependent variables models – chapter 17 (17.1, 17.2, 17.4, 17.5)

Readings

Textbook: There is *no required text* for this course. However, I find the following a good reference: Wooldridge, J M, *Introductory Econometrics: A Modern Approach*, 4th edition, Thomson/South-Western, 2009.

Other useful references include

Griffiths, W E, R C Hill, and G G Judge, *Learning and Practicing Econometrics*, John Wiley & Sons, 1993.

Johnston, J, and J. DiNardo, *Econometric Methods*, 4th edition, McGraw Hill, 1997.

Verbeek, M, *A Guide to Modern Econometrics*, 3rd edition, John Wiley & Sons, 2008.

Assessment

Assignments **20%** (Four @ 5% each); C1-C8.

Mid-trimester test **20%**, (50 minutes, covering material from weeks 1–6); C1-C4.

Final examination **60%**, (during the examination period, 2 hours); C1-C8.

If you do not sit the mid-trimester test for any reason, then your final examination will contribute 80% towards the final grade. Assignments may include both problem solving and computer tasks.

From Trimester 1, 2014, a revised Assessment Handbook will apply to all VUW courses: see <http://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf>. In particular, there will be a new grade scheme, in which the A+ range will be 90-100% and 50-54% will be a C-.

Materials and Equipment

If you have your own computer, I strongly recommend that you download a copy of the econometric software package *R* from the following website: <http://www.r-project.org/>. You can then configure it as you prefer, and will be able to use it when and where you please. The use of computers and calculators will not be required for either the midterm or final examination.

Prescription

This course covers the following topics in econometric methods: Ordinary Least Squares (with matrix algebra); Generalised Least Squares; Instrumental Variables estimation; Maximum Likelihood estimation; Binary Response and Limited Dependent Variables models; Panel Data models.

Course Learning Objectives

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

- C1 use matrix algebra to specify and derive characteristics of linear regression models
- C2 apply Generalised Least Squares
- C3 apply Instrumental Variable (IV) estimation
- C4 set out the identification issues in simultaneous equations models, and estimate such models
- C5 apply Non-linear Least Squares and Maximum Likelihood Estimation
- C6 apply common binary choice and other limited dependent variable models
- C7 apply common panel data models
- C8 use econometric software to implement the above techniques in appropriate situations

Penalties

Late submission of assignments will not be accepted without prior approval.

Expected Workload

ECON 301 is a 15-point course. Based on VUW having designated one point = 10 hours work, the expected workload would total 150 hours: spread over 15 weeks, the expected workload would average around 10 hours per week. This would involve attending lectures & tutorials, plus reading, studying and completing assignments. The 10 hours weekly average may vary for individual students, depending on their previous knowledge and understanding, and their interest and aspirations associated with the course material.

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 following period: from 13th June – 2nd July (inclusive).

Mandatory Course Requirements

There are no mandatory requirements for this course.

If you cannot complete an assignment or sit a test or examination, refer to

www.victoria.ac.nz/home/study/exams-and-assessments/aegrotat

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 or information on changes will be conveyed to students through the VUW Blackboard website.

Link to general information

For general information about course-related matters, go to

<http://www.victoria.ac.nz/vbs/studenthelp/general-course-information>

Student Feedback

Student feedback on University courses may be found at

www.cad.vuw.ac.nz/feedback/feedback_display.php

Note to Students

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 academic audit. The findings may be used to inform changes aimed at improving the quality of VBS programmes. All material used for such processes will be treated as confidential, and the outcome will not affect your grade for the course.

Withdrawal from Course

1. Your fees will be refunded if you withdraw from this course on or before Friday 14th March 2014.
2. The standard last date for withdrawal from this course is Friday 16th 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.
