TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI
VICTORIA
UNIVERSITY OF WELLINGTON

School of Economics and Finance

ECON 301 ECONOMETRICS

Trimester 1, 2015

COURSE OUTLINE

Names and Contact Details

Course coordinator & lecturer:
Yu-Wei Luke Chu Luke.Chu@vuw.ac.nz, RH 304, 463-6855

Administrator:
Alice Fong alice.fong@vuw.ac.nz, RH 318, 463-5353

Trimester Dates

Teaching Period: Monday 2nd March – Friday 5th June

Study Period: Monday 8th June – Thursday 11th June

Examination Period: Friday 12th June – Wednesday 1st July (inclusive)

Withdrawal from Course

1. Your fees will be refunded if you withdraw from this course on or before Friday 13th March 2015.

2. The standard last date for withdrawal from this course is Friday 15th 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 or online.

Class Times and Room Numbers

Lectures
Tuesday and Friday: **9:30-10:20am** in **RWW413** (Railway West Wing, Pipitea)

Tutorials
Friday: **10:30-11:20am** in **RWW102 (**Computer Lab in Railway West Wing, Pipitea)

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
Friday 1st May, 9:30-10:20am in **RWW413** (50 minute test covering material from weeks 1–6).

Course Delivery
23 lectures of 50 min each, plus eight 50 min tutorials

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.

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

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. 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.

Week	Topic	Reading
1	Multiple Regression Model – OLS	Ch. 2-4
2	Multiple Regression Model – OLS	Ch. 5-7
3	Heteroskedasticity – GLS	Ch. 8, 12
4	Heteroskedasticity – GLS	Ch. 8, 12
5	Instrumental Variables – 2SLS	Ch. 15
6	Instrumental Variables – 2SLS	Ch. 15
7	Simultaneous Equations Models	Ch. 16

8	Difference in Difference and Panel data	Ch. 13-14
9	Difference in Difference and Panel data	Ch. 13-14
10	Limited Dependent Variable Models – MLE	Ch. 17
11	Limited Dependent Variable Models – MLE	Ch. 17
12	Sample Selection Models	Ch. 17

Readings

Textbook: There is no required text for this course. However, the following textbooks will be used as a reference for all topics taught in the course:

Wooldridge, J., *Introductory econometrics: a modern approach*, 5th edition, Cengage Learning, 2013
Wooldridge, J., *Introductory Econometrics (EMEA Adaptation)*, 1st edition, Cengage Learning, 2013

Other useful references include:

Angrist, J. D., and J.-S. Pischke, *Mastering 'Metrics: The Path from Cause to Effect*, Princeton University Press, 2014
Angrist, J. D., and J.-S. Pischke, *Mostly Harmless Econometrics: An Empiricist's Companion*, Princeton University Press, 2009.
Verbeek, M., *A Guide to Modern Econometrics*, 3rd edition, John Wiley & Sons, 2008.
Johnston, J., and J. DiNardo, *Econometric Methods*, 4th edition, McGraw Hill, 1997.

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 will not be required for either the midterm or final examination.

Assessment

The Assessment Handbook will apply to all VUW courses: see http://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf.

Assignments	**25%** (4 assignments at roughly 3-week intervals)
Mid-trimester test	**25%** (**Friday 1st May, 9:30-10:20am RWW413**)
Final examination	**50%** (2 hours, during the examination period)

Penalties

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

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:

Friday 12th June – Wednesday 1st 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.

Student feedback

Student feedback on University courses may be found at
www.cad.vuw.ac.nz/feedback/feedback_display.php

Link to general information

For general information about course-related matters, go to
http://www.victoria.ac.nz/vbs/studenthelp/general-course-information

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.

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