
School of Economics and Finance
ECON408: Advanced Econometrics A
Trimester 1 2015
COURSE OUTLINE

Name and Contact Details

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Trimester Dates

Teaching Period:	Monday 2 March - Friday 5 June
Study Period:	Monday 8 June - Thursday 11 June
Examination Period:	Friday 12 June - Wednesday 1 July (inclusive)

Prescription

In-depth coverage of advanced econometric theory. Topics may include the estimation and inference of linear and non-linear models, irregular linear and/or non-linear models, quasi-maximum likelihood, and GMM estimation and inference.

Course Delivery

This course will be delivered by one 2-hour lecture per week.

Class Times and Room Numbers

	Date	Time	Room
Lectures:	Tuesday	11:30-13:20	RWW125

Course Content

This course focuses on advanced econometric theory and methods for microeconomic data. It will begin with a discussion of relevant asymptotic theory that underlies the econometric theory of most methods, followed by a discussion of computational-based sampling (Monte Carlo) methods that complement the asymptotic theory, are widely used in econometrics, and will be used in practical assignments throughout the course ... and beyond! The course will then provide a systematic coverage of the main generic estimation methods used in econometrics.

The course will cover the following topics:

- Asymptotic theory: D&M (1993, Chap 4) and Wooldridge (2010, Chap 2 and 3)
- Computational-based sampling methods: D&M (1993, Chap 21)
- A review of linear regression methods: D&M (2004, Chap 1-4) and Wooldridge (2010, Chap 4, 5, and 10)
- Multivariate systems of equation estimation: D&M (2004, Chap 12)
- Maximum likelihood estimation: D&M (2004, Chap 10)
- Generalised method of moments (GMM) estimation: D&M (2004, Chap 9)

A more detailed reading list is provided below. Yu-Wei Luke Chu will teach the first half of the course (weeks 1-6), and Yiğit Sağlam the second half (weeks 7-12).

Course Learning Objectives

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

1. understand advanced econometric estimation methods and their asymptotic properties,
2. use Monte Carlo and Bootstrap simulation approaches to analyse how econometric methods work in different contexts,
3. apply econometric methods to analyse economic data.

Assessment Requirements

The Assessment Handbook will apply to all VUW courses: see

<http://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf>.

Type	Number	Weight	Total
Assignments:	4	7.5%	30%
Mid-trimester test:	1	35%	35%
Final Exam:	1	35%	35%
			100%

The midterm test covers the first half of the course, while the final exam covers only the materials in the second half of the course.

Expected Workload

You are expected to spend roughly 150 hours completing this course. This includes preview, lecture attendance, and review and study for assignments, test and exams. On average this is roughly 10 hours per week from the start of the course until the final exam, but the load may vary over time and across students.

Materials and Equipment

There will be approximately four assignments throughout the course, involving a combination of theoretical and hands-on applied examples. These assignments are intended to improve your understanding of the material, and will contribute to your final course grade. You are encouraged to use the econometric software R, which is freeware, and can be downloaded from the following website: <http://www.r-project.org/>. However it is acceptable to use alternative software such as GAUSS, MATLAB, STATA or EVIEWS if you prefer.

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 12 June - Wednesday 1 July (inclusive).

Penalties

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

Mandatory Course Requirements

There are no mandatory course requirements.

If you cannot complete an assignment or sit a test or examination, refer to:
www.victoria.ac.nz/home/study/exams-and-assessments/aegrotat

Withdrawal from Course

1. Your fees will be refunded if you withdraw from this course on or before Friday 13 March 2014.
2. The standard last date for withdrawal from this course is Friday 15 May 2014. After this date, students forced to withdraw by circumstances beyond their control must apply for permission on an *Application for Associate Deans Permission to Withdraw Late* including supporting documentation. The application form is available from either of the Faculty Student Customer Service Desks or online.

Communication of Additional Information

Additional information will be posted on Blackboard.

Class representative

A class representative will be elected for the entire class of Honours, and that persons 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.

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.

Use of Turnitin

Student work provided for assessment in this course may be checked for academic integrity by the electronic search engine <http://www.turnitin.com>. Turnitin is an on-line plagiarism prevention tool which compares submitted work with a very large database of existing material. At the discretion of the Head of School, handwritten work may be copy-typed by the School and submitted to Turnitin. A copy of submitted materials will be retained on behalf of the University for detection of future plagiarism, but access to the full text of submissions will not be made available to any other party.

Readings

No set textbook is assigned for this course. However, the following texts are recommended as useful references.

Davidson, Russell, and James G. MacKinnon (1993), *Estimation and Inference in Econometrics*, Oxford University Press.

Davidson, Russell, and James G. MacKinnon (2004), *Econometric Theory and Methods*, Oxford University Press.

Wooldridge, Jeffrey M. (2010), *Econometric Analysis of Cross Section and Panel Data*, MIT Press, Cambridge, Massachusetts (2nd edition).

In addition, the following journal articles and other readings will be relevant.

- Asymptotic theory (D&M, 1993, Chap. 4)
 - * White, H. (1984), *Asymptotic Theory for Econometricians*, Academic Press, Orlando, Florida.
- Computational-based sampling methods (D&M, 1993, Chap 21)
- A review of linear regression methods (D&M, 2004, Chap 1-4) and Wooldridge (2010, Chap 4, 5, and 10)
- Weak Instruments
 - * Angrist, Joshua D., and Alan B. Krueger (1991), “Does Compulsory Schooling Attendance Affect Schooling and Earnings?”, *Quarterly Journal of Economics*, Vol. 106, No. 4, pp. 979–1014.
 - * Bound, John, David A. Jaeger and Regina M. Baker (1995), “Problems with Instrumental Variables Estimation when the Correlation Between the Instruments and the Endogenous Explanatory Variables is Weak”, *Journal of the American Statistical Association*, Vol. 90, No. 430, pp. 443–450.
 - * Imbens, Guido W., and Joshua D. Angrist (1994), “Identification and Estimation of Local Average Treatment Effects”, *Econometrica*, Vol. 62, No. 2, pp. 467–475.
- Multivariate systems of equation estimation (D&M, 2004, Chap 12)
 - * Epple, Dennis, and Bennett T. McCallum (2006), “Simultaneous Equation Econometrics: The Missing Example”, *Economic Inquiry*, Vol. 44(2), pp. 374–384.
 - * Mroz, Thomas A. (1987), “The Sensitivity of an Empirical Model of Married Womens Hours of Work to Economic and Statistical Assumptions”, *Econometrica*, Vol. 55(4), pp. 765–799.
- Maximum likelihood estimation (D&M, 2004, Chap 10)
 - * Chesher, Andrew (1983), “The Information Matrix Test: Simplified Calculation Via a Score Test Interpretation”, *Economics Letters*, Vol. 13, pp. 45–48.
 - * Davidson, Russell, and James G. MacKinnon (1992), “A New Form of the Information Matrix Test”, *Econometrica*, Vol. 60, No. 1, pp. 145–157.
 - * Lancaster, Tony (1984), “The Covariance of the Information Matrix Test”, *Econometrica*, Vol. 52, No. 5, pp. 1051–1053.
 - * White, Halbert (1982), “Maximum Likelihood Estimation of Misspecified Models”, *Econometrica*, Vol. 50, No. 1, pp. 1–25.

- Generalised method of moments (GMM) estimation (D&M, 2004, Chap 9)
 - * Chamberlain, Gary (1982), “Multivariate Regression Models for Panel Data”, *Journal of Econometrics*, Vol. 18, pp. 5-46.
 - * Hansen, Lars Peter (1982), “Large Sample Properties of Generalized Method of Moments Estimators”, *Econometrica*, Vol. 50, No. 4, pp. 1029–1054.
 - * Newey, Whitney K. (1983), “A Method of Moments Interpretation of Sequential Estimators”, *Economics Letters*, Vol. 14, pp. 201–206.
 - * White, Halbert (1982), “Instrumental Variables Regressions with independent Observations”, *Econometrica*, Vol. 50, No. 2, pp. 483–499.
 - * Wooldridge, Jeffrey M. (2001), “Applications of Generalized Method of Moments Estimation”, *Journal of Economic Perspectives*, Vol. 15, No. 4, pp. 87–100.
