

THE UNIVERSITY OF
NEW SOUTH WALES



AUSTRALIAN SCHOOL OF BUSINESS
SCHOOL OF ECONOMICS

ECON2207 / ECON3291 (ARTS)

Econometric Methods

SESSION 2, 2009

COURSE INFORMATION AND LECTURE SCHEDULE

Lecturer in Charge:

Associate Professor Denise Doiron
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Email: d.doiron@unsw.edu.au

Lectures: Mondays 2:00-4:00
Venue: Law Theatre G04

Website: <http://vista.elearning.unsw.edu.au/>

<u>1. STAFF CONTACT DETAILS</u>	<u>3</u>
Pitstop	3
<u>2. COURSE DETAILS</u>	<u>3</u>
2.1 Class hours	3
2.2 Units of credit	4
2.4 Course Summary	4
2.5 Relationship of this course to other courses	4
2.6 Student Learning Outcomes	4
<u>3. LEARNING AND TEACHING ACTIVITIES</u>	<u>5</u>
3.2 Teaching and learning strategies	5
<u>4. ASSESSMENT</u>	<u>6</u>
4.1 Formal requirements	6
4.2 Assessment details	7
<u>5. ACADEMIC HONESTY AND PLAGIARISM</u>	<u>8</u>
<u>6. COURSE EVALUATION AND DEVELOPMENT</u>	<u>8</u>
<u>7. STUDENT RESPONSIBILITIES AND CONDUCT</u>	<u>8</u>
<u>8. STUDENT RESOURCES AND SUPPORT</u>	<u>10</u>
<u>9. COURSE RESOURCES</u>	<u>11</u>
9.3 Computing work	11
<u>10. LECTURE SCHEDULE</u>	<u>12</u>

1. STAFF CONTACT DETAILS

Lecturer-in-charge: Associate Professor Denise Doiron
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Telephone: 9385 3734
Consultation Hours: Wednesdays 1:30-4:30pm

The lecturer-in-charge is responsible for the course content as well as the overall administration of the course. You should feel free to approach her about any academic matter related to the course. (However, please note that the lecturer has no advance notice of the date and time of the exam.)

Tutors: Simone Cheung (Tutor-in-charge)
Hong Il Yoo
Uwe Helmes
Consultation Hours: To be posted on the website

The tutor-in-charge has responsibility for the administration of the tutorial program. You should first contact your tutor or the tutor-in-charge if you have a problem concerning the tutorial program.

Pitstop

Pitstop provides an opportunity for consultation with tutors. It will start in Week 3 and continue till Week 13. The schedule of Pitstop times for this course will be announced on the course website.

2. COURSE DETAILS

2.1 Class hours

There is one 2-hour lecture and one 1-hour tutorial class per week. The lecture is scheduled for Monday 2:00-4:00pm in the Law Theatre G04.

Lectures will run from week 1 to week 12 inclusively.

Each student should enrol in a tutorial group which meets for one hour each week. Students enrol via their MyUNSW site. Once enrolled, moving from one tutorial group to another will not be permitted unless you have compelling reasons. You should consult your tutor about these matters.

If, due to illness or other exceptional circumstances, you are unable to attend your usual tutorial, you may try to attend another tutorial in the same week. However, students are expected to attend their usual tutorial class for at least eight tutorials during the session.

Tutorials will run from week 2 to week 13 inclusively.

2.2 Units of credit

This subject is worth 6 units of credit. There is no parallel teaching in this course. The prerequisite for the course is ECON2206, Introductory Econometrics. Students are presumed to be familiar with the material covered in the ECON1202, ECON1203, and ECON2206 sequence taught at UNSW.

2.4 Course Summary

Econometric theory provides the techniques needed to quantify the strength and form of relationships between variables. Modern computer software makes it easy to implement these techniques, such as running a regression, but how do you know which model to specify or whether the data are appropriate? Applied econometrics is concerned with the strategies that lead to an effective use of econometric techniques. Together these techniques and strategies constitute what we define as “econometric methods”. In this course, these methods are reviewed and students are asked to conduct various applications of econometric techniques to economic data.

2.5 Relationship of this course to other courses

This course is a core requirement for the BEc and represents the second in a sequence of econometrics courses (the first being ECON2206) designed to equip students with knowledge of the key econometric tools and methods expected of an applied economist.

The course also provides necessary skills and techniques that will be used in further study of econometrics. A major in Econometrics or Business Statistics is designed to equip students with the more advanced statistical and quantitative skills that are widely used and increasingly demanded by employers in commercial fields and the public sector.

2.6 Student Learning Outcomes

On completion of the course, students will

1. Be more familiar with guidelines for using econometric techniques effectively.
2. Have a better appreciation of the model building cycle and the relevance of theoretical models in conducting applied work.
3. Have the confidence and skills to critically evaluate empirical research.
4. Have a thorough understanding of why it is necessary to consider extensions to the classical linear regression model when dealing with discrete dependent variables.
5. Be familiar with a range of econometric models and tools that are useful when dealing with discrete dependent variables.
6. Have a deeper understanding of the problems of omitted variables, endogenous regressors and selection bias, problems that are prevalent in most economic data.
7. Understand the models that become available when dealing with panel data and how they are related to modern policy evaluation.
8. Have developed proficiency in the use of SHAZAM for econometric modelling.

Graduate Attributes

Course Learning	ASB Graduate Attributes
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Outcomes	
1, 2, 3, 4, 5, 6, 7	Critical thinking and problem solving
1, 2, 3, 8	Communication
1, 2, 3	Teamwork and leadership
1, 2, 3, 7	Social, ethical and global perspectives
1, 2, 4, 5, 6, 7	In-depth engagement with relevant disciplinary knowledge
1, 2, 3, 7, 8	Professional skills

3. LEARNING AND TEACHING ACTIVITIES

3.1 Approach to learning and teaching

The philosophy underpinning this course and its Teaching and Learning Strategies (3.3 below) are based on “Guidelines on Learning that Inform Teaching at UNSW”. These guidelines may be viewed at: www.guidelinesonlearning.unsw.edu.au.

Quantitative information and statistics are pervasive not only in the study of economics and business but in understanding a wide range of phenomena. Every attempt will be made to demonstrate the relevance of the course to understanding such phenomena. This will require applying econometric and statistical methods and techniques to practical problems in a broad set of topics.

Students who are undertaking this course will have some background in basic statistics and grounding in the principles of regression analysis. Using this knowledge as a base, an extensive discussion of the use of regression theory and some of its extensions will be provided. We demonstrate how regression models can be applied to data to estimate relationships, to forecast and to test hypotheses that arise in economics and business. We also discuss common problems that arise in most economic data.

General principles or guidelines for undertaking applied work are discussed. In particular, we stress careful data analysis, the need to evaluate estimated models and the importance of the links between econometric models and the underlying substantive knowledge or theory associated with the particular application. These issues will be related to applications drawn from fields such as economics, marketing, finance and accounting.

It is essential that the discussion of how to use econometric tools effectively be complemented with practice in analysing data. An important aid in this particular task will be the computing component where the popular econometrics package SHAZAM will be used.

3.2 Teaching and learning strategies

The examinable content of the course comprises topics covered in lectures, assigned readings and tutorials.

Lectures

The purpose of lectures is to provide a logical structure for the topics that make up the course; to emphasise the important concepts and methods of each topic, and to provide relevant examples and case studies to which the concepts and methods are applied.

Tutorials

The object of the tutorials is to discuss various approaches to, and issues associated with the assigned exercises and topics covered in the course. Each week a document will be posted containing the exercises which are to be covered in tutorials. A number of these exercises are intended to be challenging so as to stimulate questions and discussion. Therefore students should not feel inadequate if they have difficulty solving all the exercises before attending their tutorial. However, it is important that students attempt the assigned exercises before the corresponding tutorial sessions. Tutorials are an integral component of the course; attendance and participation in your tutorial is crucial for your successful completion of the course

Learning strategies

While students may have preferred individual learning strategies, it is important to note that most learning will be achieved outside of class time. Lectures can only provide a structure to assist your study, and tutorial time is limited.

An 'ideal' learning strategy (on which provision of the course materials is based) might include:

- Prior to attending a lecture, download and read the lecture notes for your lecture and bring them with you to the lecture. The lecture notes are available for downloading on the Econometric Methods website.
- Attend the lecture. The lecture notes form the basis for the lecture. Key concepts will be emphasised and demonstrated through worked examples.
- Complement your lecture notes with the assigned readings and ask questions from the lecturer or your tutor if some issues are still unclear.
- Prior to attending tutorials, attempt the assigned questions for that week. Do not be discouraged if you cannot answer all of the questions as some questions are more difficult than others. Attempting the assigned tutorial questions will provide a self-test of your understanding of particular topics and identify those topics which may require further attention. Many of the tutorial questions have been taken from past exam papers. Tutors will work through the assigned tutorial questions each week.
- Attempt additional problems from the end-of-chapter questions in the textbook. Many of the tutorial and examination questions have a similar structure to the textbook questions. By attempting additional questions, you are able to test your own knowledge and, through practice and experience, improve your understanding of the material.

4. ASSESSMENT

4.1 Formal requirements

In order to pass this course, you must:

- obtain a total mark of at least 50 out of a maximum of 100; and
- make a satisfactory attempt at all assessment tasks (see below).

4.2 Assessment details

Assessment Task	Weighting	Learning Outcomes assessed	ASB Graduate Attributes assessed	Length	Due Date
Problem Sets	20%	1 - 8	1,2,5,6		Weeks 4,7
Project	25%	1 - 8	1 - 6		Week 10
Final Exam	55%	1 - 7	1,2,4,5,6	2 hours	University Exam Period
	100%				

Tutorial Assignments

Problems and computer exercises will be distributed every week. Written answers will be required for a subset of these while other questions will be earmarked for discussion in lectures and tutorials.

In order to review your progress, written answers for pre-specified questions will be collected during week 4 and week 7 tutorials or may be deposited in the school's collection boxes by 4pm on Friday August 14 and Friday September 4 respectively.

Late assignments: 20% of the value of each assignment will be deducted for each day (24 hours) or part thereof past the deadline.

The assignments will be marked and handed back as promptly as possible. Written answers must be typewritten and neatly presented. Pages must be stapled and the student name and number must be indicated. More details on the assignments will be provided in class and on the website.

The purpose of the assignments is to test knowledge and understanding of econometric concepts, methodology and interpretation of results and the ability to apply econometric reasoning in solving a realistic problem. It will also provide a self-test of how you are doing in the course.

Project

In keeping with the main objectives of the course students are expected to gain some experience in "doing econometrics". The major project serves this purpose. Students will be given a pre-assigned topic where each student will receive a personalized set of data to analyse. The results of the analysis will be presented in the form of a report.

Questions and issues related to the project will be discussed in lectures and will form part of the weekly tutorial questions. Note that although the questions specific to the project can be discussed with the lecturer and the tutors, specific answers will not be provided as these will form part of the assessable document. The document must be typewritten and stapled. Student name and number must be clearly indicated on the cover page.

This major project should be deposited in the school's collection boxes by 5pm on Friday October 2.

Because of the integration of the project with lectures and weekly assignments, it is highly unlikely that an extension to the deadline would be granted.

Late submissions: 20% of the value of the project will be deducted for each day (24 hours) or part thereof past the deadline.

Final examination

The final examination will consist of six questions from which the students must choose four. It will be a two hour examination and will be held during the University's final examination period. Examples of previous exam questions will be provided.

The purpose of the final examination is to assess knowledge of econometric concepts, methodology and interpretation of results relating to the models reviewed in class. All material covered in the lectures and tutorial program is examinable.

5. ACADEMIC HONESTY AND PLAGIARISM

The University regards plagiarism as a form of academic misconduct, and has very strict rules regarding plagiarism. For UNSW's policies, penalties, and information to help you avoid plagiarism see: <http://www.lc.unsw.edu.au/plagiarism/index.html> as well as the guidelines in the online ELISE tutorial for all new UNSW students: <http://info.library.unsw.edu.au/skills/tutorials/InfoSkills/index.htm>.

6. COURSE EVALUATION AND DEVELOPMENT

Each year feedback is sought from students about the courses offered in the School and continual improvements are made based on this feedback. UNSW's Course and Teaching Evaluation and Improvement (CATEI) Process is one of the ways in which student evaluative feedback is gathered. You are strongly encouraged to take part in the feedback process.

7. STUDENT RESPONSIBILITIES AND CONDUCT

Students are expected to be familiar with and adhere to university policies in relation to class attendance and general conduct and behaviour, including maintaining a safe, respectful environment; and to understand their obligations in relation to workload, assessment and keeping informed.

Information and policies on these topics can be found in the 'A-Z Student Guide': <https://my.unsw.edu.au/student/atoz/ABC.html>. See, especially, information on 'Attendance and Absence', 'Academic Misconduct', 'Assessment Information', 'Examinations', 'Special Consideration', 'Student Responsibilities', 'Workload' and policies such as 'Occupational Health and Safety'.

7.1 Workload and attendance

It is expected that you will spend at least **ten hours** per week studying this course. This time should be made up of reading the lecture notes and textbook, working on tutorial and computer exercises, and attending classes. Over-commitment has been a cause of failure for many students. You should take the required workload into account when planning how to balance study with employment and other activities.

Your regular and punctual attendance at lectures and tutorials is expected in this course. University regulations indicate that if students attend less than eighty per cent of scheduled classes they may be refused final assessment. **More importantly, attendance at lectures and tutorials will be beneficial for your understanding of the material.**

7.2 General conduct and behaviour

You are expected to conduct yourself with consideration and respect for the needs of your fellow students and teaching staff. Conduct which unduly disrupts or interferes with a class, such as ringing or talking on mobile phones, is not acceptable and students may be asked to leave the class. More information on student conduct is available at: www.my.unsw.edu.au

7.3 Keeping informed

You should take note of all announcements made in lectures, tutorials or on the course website. In particular you should check “Announcements” on the course website at least once a week. From time to time, the University will send important announcements to your university email address without providing you with a paper copy. You will be deemed to have received this information.

7.4 Special consideration and supplementary examinations

You must submit all assignments and attend all examinations scheduled for your course. You should seek assistance early if you suffer illness or misadventure which affects your course progress. For advice on UNSW policies and procedures for granting special consideration and supplementary exams, see:

‘UNSW Policy and Process for Special Consideration’:

<https://my.unsw.edu.au/student/atoz/SpecialConsideration.html>

- Applications for special consideration (including supplementary examinations) must go through UNSW Central administration (within 3 working days of the assessment to which it refers) – applications will **not** be accepted by teaching staff;
- Applying for special consideration does not automatically mean that you will be granted additional assessment or that you will be awarded an amended result;
- If you are making an application for special consideration (through UNSW Central Administration) please notify your Lecturer in Charge;

Please note that a register of applications for Special Consideration is maintained. History of previous applications for Special Consideration is taken into account when considering each case.

ASB Policy and Process for Special Consideration and Supplementary Exams

In the case of undergraduate students in the ASB, requests for special consideration are determined by a Faculty wide panel. If the Faculty panel grants a special consideration request, this may entitle the student to sit a supplementary examination. In such cases the following procedures will apply:

- Supplementary exams will be scheduled centrally and will be held approximately two weeks after the formal examination period. Actual date will be advised by mid-semester.
- Where a student is granted a supplementary examination as a result of a request for special consideration, the student's original exam (if completed) will not be marked and only the mark achieved in the supplementary examination will count towards the final grade.

The 'ASB Policy and Process for Special Consideration and Supplementary Exams in Undergraduate Courses' is available at:

<http://wwwdocs.fce.unsw.edu.au/fce/current/StudentSuppExamProcedure.pdf> .

Further information for undergraduate students is on the ASB website (see '[Policies and Guidelines for Current Students](#)').

7.5 Occupational Health and Safety

UNSW Policy requires each person to work safely and responsibly, in order to avoid personal injury and to protect the safety of others. For more information, see <https://my.unsw.edu.au/student/atoz/OccupationalHealth.html>.

8. STUDENT RESOURCES AND SUPPORT

The University and the ASB provide a wide range of support services for students, including:

ASB Education Development Unit (EDU) (www.business.unsw.edu.au/edu)

Academic writing, study skills and maths support specifically for ASB students. Services include workshops, online and printed resources, and individual consultations. EDU Office: Room GO7, Ground Floor, ASB Building (opposite Student Centre); Ph: 9385 5584; Email: edu@unsw.edu.au

UNSW Learning Centre (www.lc.unsw.edu.au)

Academic skills support services, including workshops and resources, for all UNSW students. See website for details.

Library training and search support services: <http://info.library.unsw.edu.au>

UNSW IT Service Desk: Technical support for problems logging in to websites, downloading documents etc. Library, Level 2; Ph: 9385 1333.

Website: www.its.unsw.edu.au/support/support_home.html

UNSW Counselling Service (<http://www.counselling.unsw.edu.au>)

Free, confidential service for problems of a personal or academic nature; and workshops on study issues such as 'Coping With Stress' and 'Procrastination'.

Office: Level 2, Quadrangle East Wing ; Ph: 9385 5418

Student Equity & Disabilities Unit <http://www.studentequity.unsw.edu.au>)

Advice regarding equity and diversity issues, and support for students who have a disability or disadvantage that interferes with their learning. Office: Ground Floor, John Goodsell Building; Ph: 9385 4734

9. COURSE RESOURCES

9.1 Course website

The Econometric Methods website may be found at <http://vista.elearning.unsw.edu.au> You are required to have a Unipass and a Unipin and be enrolled in the course to access the website.

The website contains: (a) the course outline, the tutorial documents and other course handouts; (b) the lecture notes; (c) data used in the tutorial problems and project; (d) past exam papers; and (e) course announcements.

Students should consult this website at least once a week as it contains important information about the course. It will be assumed that all students have seen any notice posted on the course website.

9.2 Textbook and readings

The textbook for this course is:

Wooldridge, J.M. (2009), *Introductory Econometrics: A Modern Approach*, 4th ed. South-Western.

The 2nd and 3rd editions are also suitable as they are close substitutes for the 4th edition.

This is the basic reference for the course. It will be the primary source of extra reading for material covered in lectures and assignments and some exercises will be taken from the book.

An alternative text is:

Stock, J.H. and M.W. Watson (2006), *Introduction to Econometrics*, 2nd ed. Addison-Wesley.

Although Stock and Watson (2006) is not a required text, the reading list below includes chapters from the text. The material is similar to that provided in Wooldridge but sometimes, different styles or approaches in explaining the same material will be more helpful to individual students. Both texts will be available in the Open Reserve Section of the library. Also they will be available for purchase from the bookstore.

9.3 Computing work

Computing is an integral component of Econometric Methods. Apart from tutorial problems that require computing, the major project, which is worth 25% of the final grade, cannot be successfully completed without using econometric software.

The default econometric software is SHAZAM. Assigned computer work may be done in the computing labs or SHAZAM can be used over the web. The following link will take you to the SHAZAM site where you can run the software over the web by clicking on **Run SHAZAM**. <http://shazam.econ.ubc.ca/> Alternatively, the School has a site license for SHAZAM, and you can obtain a copy of the software from the School office and install it on your own PC. A nominal fee of \$10 is charged to cover the CD cost.

It is possible to complete the course using other software such as STATA, SAS or E-Views. However, EXCEL will not be sufficient.

Brief notes on SHAZAM will be available electronically on the course webpage. The SHAZAM website is a useful resource and for a complete treatment there is a manual: *SHAZAM User's Manual Version 8.0*, (1997). McGraw-Hill.

10. LECTURE SCHEDULE

The schedule given below is only approximate because lectures, where possible, will be interactive. This means there is some scope to discuss and cover specific material in more or less detail depending on the preferences and needs of the class.

In the following, W refers to Wooldridge (2009) while S&W refers to Stock and Watson (2006). The references to parts of earlier chapters in Wooldridge (2009), especially those chapters already covered in ECON 2206 are not indicated. Students are encouraged to review the relevant material from ECON 2206 as we progress through the course.

Note: Additional readings will be assigned during class and posted on the website.

Weeks 1 and 2

Overview of the course and introduction to model building.

Questions addressed:

Why is applied econometrics difficult? What is the model building cycle? Where do models come from? Why are data so crucial in econometric model building? What can we learn about the data by looking at simple descriptive statistics? What is important in evaluating empirical work?

W, Chs. 1 and 19.

S&W, Chs. 1 and 3.

Weeks 3, 4, and 5.

Discrete dependent variables.

Questions addressed:

What's different when using qualitative or discrete variables in econometric modelling? What's wrong with the linear probability model? What is the logit model? How are the parameters of a logit model estimated? What is the probit model? How are the parameters of a probit model estimated? How do we interpret probit (and logit) estimates? How can we evaluate applied econometric studies using binary choice models?

W, Ch. 17 and Appendix B.
S&W, Ch. 11.

Weeks 6, 7 and 8.

Omitted variables, endogenous regressors and selection bias.

Questions addressed:

What are the threats to model validity? Why is the omission of a relevant variable potentially so important? What can be done if you suspect that this is a problem? Are there any exogenous variables in economics? What is sample selection bias? What can you do if you suspect that this is important in your data?

W, Ch. 15.
S&W, Chs. 9 and 12.

Weeks 9 and 10

Experimental data, natural experiments and difference-in-differences.

Questions addressed:

What are experimental data? What can go wrong in generating experimental data? How do quasi-experimental data differ? Why are panel data so useful in doing policy evaluations? What should I look for when reading policy evaluations?

W, Ch 14.
S&W, Ch. 13.

Weeks 11 and 12

More on modelling and different types of data.

Questions addressed:

Can economic models be used more directly to generate econometric models? What are some of the differences and challenges when using time series data? What are examples of other types of data used in applied economics? Why and how should empirical models be tailored to the use of these alternative data.

Readings to be posted.

Note: Monday October 5th (week 11) is a holiday and there will be no lecture. However, tutorials will be held during the week and those of you with tutorials on Monday are encouraged to attend an alternative tutorial.