

THE UNIVERSITY OF
NEW SOUTH WALES



SCHOOL OF ECONOMICS

**ECON5257:
INTRODUCTORY STATISTICS AND DATA
ANALYSIS**

SESSION 2, 2007

COURSE INFORMATION AND LECTURE SCHEDULE

Lecturer-in-Charge:

Sang-Wook (Stanley) Cho
Room Heffron 439
Tel: 9385 3287
s.cho@unsw.edu.au

Course Website

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

TEACHING STAFF

The **Lecturer-in-charge** is Sang-Wook (Stanley) Cho (Heffron Room 439; Ph. 9385 3287, email: s.cho@unsw.edu.au).

The Lecturer-in-charge is responsible for the overall direction and content of the course. You should feel free to approach your lecturer about any academic matter either during his specified office hours or by email (at any time).

INFORMATION ABOUT THE COURSE

Class Hours

This is a half-session course. It runs from week 8 to week 14 (inclusive).

There will be one 2 hour lecture per week and a 1 hour tutorial class.

Lecture and Tutorial Time and Location

Lectures and tutorials will take place on Wednesdays, from 18.00 to 20.00 and 20.00 to 21.00, respectively. Location of lectures and tutorial: CLB 3.

Textbook

The textbook for this course, which contains the essential reading and tutorial exercises, is Keller, G. (2005) *Statistics for Management & Economics*, 7th Edition, Duxbury Press. This text is over 800 pages in length, so do not attempt to read it from “cover-to-cover”!

Comprehensive lecture notes will be distributed on the course web site prior to each lecture.

COURSE OBJECTIVES AND CONTENT

The objective of this course is to provide an introduction to the statistical and econometric techniques used in economic analysis and business decision making. This course assumes no previous knowledge of statistical theory, but an understanding of basic mathematics is assumed. The course covers the following topics:

- Descriptive Statistics
- The Theory of Probability
- Probability Distributions
- Sampling Theory and Sampling Distributions
- Point and Interval Estimation
- Hypothesis Testing
- Regression Analysis
- Estimation and Hypothesis Testing in Regression Analysis

The course also aims to provide some basic familiarity with the use of computer spreadsheet software for data analysis and problem solving. The recommended software for this course is *Excel for Windows*.

Student Learning Outcomes

On completion of the course, students should be able to:

1. Demonstrate an understanding of statistical concepts and their appropriate usage
2. Construct statistical arguments in terms of these concepts, and present logical statistical arguments in both written and oral form
3. Apply simple regression models to the analysis of relevant economic issues.

The course aims to provide benefits to students in terms of the ability to use statistical principles in 'rational' decision-making;

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 to which the concepts and methods are applied.

Tutorials

The purpose of tutorial meetings is to enable students to raise questions about difficulties encountered in their studies. In certain circumstances, we will use the tutorial time for unfinished part of the lecture.

Note: the tutorial exercises will give a good indication of the kind of questions that can be expected in the course examinations.

Every week, students should attempt all questions. Students are encouraged to collaborate on tutorial assignments and on the computer assignment. However, presentation of the latter should be done individually. **Identically presented computer assignments will be given a mark equal to (raw mark)/(total number of identically presented assignments).**

Consultation

Students are encouraged to ask questions related to this subject during lectures when time permits, and especially during tutorials. The lecturer-in-charge is available on **Mondays from 11.30 to 13.00 and on Wednesdays from 14.00 to 15.30** (times subject to change). Other consultation hours are possible by appointment.

STUDENT RESPONSIBILITIES AND CONDUCT

Workload

It is expected that you will spend at least **ten hours** per week studying this course. This time should be made up of reading, research, working on exercises and problems, and attending classes. In periods where you need to complete assignments or prepare for examinations the workload may be greater.

Over-commitment has been a cause of failure for some students. You should take the required workload into account when planning how to balance study with employment and other activities.

Attendance

Your regular and punctual attendance at lectures and seminars 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.

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

Keeping Informed

You should take note of all announcements made in lectures, tutorials or on the course web site. From time to time, the University will send important announcements to your University e-mail address without providing you with a paper copy. You will be deemed to have received this information.

ASSESSMENT

Formal Requirements

In order to pass this course, you must:

- ❑ achieve a composite mark of at least 50 percent; and
- ❑ make a satisfactory attempt at all assessment tasks.

Assessment Details

Homework assignments Due before next lecture	30%
Mid-session examination (Wednesday 3 October) covering topics of Lectures 1 & 2	20%
Final exam (to be timetabled by the University)	50%

Late assignments will not be marked.

Mid-session Examination:

There will be a 50-minute “mid-session” examination on **Wednesday 3rd October**. This examination will be held during the regular lecture time. After the exam, we will resume the normal lecture and tutorial. Subject material from Lectures 1 and 2 will be examined.

Note: There will be NO supplementary exam offered for the mid-Session examination. Students who fail to attend the mid-session examination will need to apply for Special Consideration. Special Consideration applications must be made within 3 days of the Exam through NewSouthQ in the Chancellery and NOT through the lecturer-in-charge (although you should advise the lecturer-in-charge that you have made an application). You will need to provide full documentation of the reason for the absence (eg, illness). Employment obligations of any kind are not acceptable reasons for absence from any test/examination.

Those students whose request is granted for Special Consideration for the mid-session examination will have their final mark re-weighted to accommodate the missing 20%.

Assignment Format

The assignment must be printed in MSWORD or PDF format and sent to the lecturer-in-charge before, the due time and date. Relevant computer output can be attached in the back. All assignments must include the *Assignment Cover Sheet* as their first page. This can be downloaded from the course web site.

Special Consideration and Supplementary Examinations

A supplementary final examination *may* be offered to students who failed to attend the final examination for medical reasons, or whose performance during the final examination was severely affected by illness, or other extraordinary circumstances that can be documented by the student. Supplementary examinations are not offered as a matter of course.

The following conditions *must* be fulfilled before an application to sit for a supplementary final examination will be considered:

- (i) the student's performance during the session (based on the student's tutorial assessment mark and mid-session exam mark) must be deemed to be at a satisfactory level by the lecturer-in-charge; and
- (ii) the student has applied for special consideration which is made through NewSouthQ within 3 days of the final examination, and the application is supported with full documentation.

Please note:

- *If* a supplementary examination is granted, the format of that examination will be similar to that of the final examination.
- Students who are granted a supplementary examination will be advised of the date of the supplementary exam as soon as possible. It is the student's responsibility to ensure that they are available to sit for the supplementary exam on the date specified.

ACADEMIC HONESTY AND PLAGIARISM

The University regards plagiarism as a form of academic misconduct, and has very strict rules regarding plagiarism. For full information regarding policies, penalties and information to help you avoid plagiarism see: www.my.unsw.edu.au/student/atoz/Plagiarism

Plagiarism is the presentation of the thoughts or work of another as one's own.* Examples include:

- direct duplication of the thoughts or work of another, including by copying work, or knowingly permitting it to be copied. This includes copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;
- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and,

- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.[†]

Submitting an assessment item that has already been submitted for academic credit elsewhere may also be considered plagiarism.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

Students are reminded of their Rights and Responsibilities in respect of plagiarism, as set out in the University Undergraduate and Postgraduate Handbooks, and are encouraged to seek advice from academic staff whenever necessary to ensure they avoid plagiarism in all its forms.

The Learning Centre website is the central University online resource for staff and student information on plagiarism and academic honesty. It can be located at:

www.lc.unsw.edu.au/plagiarism

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle

[†] Adapted with kind permission from the University of Melbourne.

STUDENT RESOURCES

Course Website

The course website can be found at: <http://vista.elearning.unsw.edu>

The website contains copies of :All Course Handouts; Additional Course Materials; Answers to Tutorial Review Questions; Mid-session Exam Marks; and Announcements. Students should consult this website at least once a day as it contains important information about the course. It will be assumed that all students have seen any notice posted on the course website.

Student Support Services

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

- Learning and study support;
- Counselling support;
- Library training and support services;
- Disability support services;

Educational Development Unit

Additional learning support, tailored to the needs of FCE students, is available from the Education Development Unit (EDU) in the Faculty. The EDU offers a range of services for FCE students including:

- o academic skills workshops run throughout the session;
- o printed and on-line study skills resources e.g. referencing guide, report writing and exam preparation;
- o a drop-in resource centre containing books and audio visual material that may be borrowed; and
- o a limited consultation service for students with individual or small group learning needs.

More information about the EDU services including on-line resources, workshop details and consultation request forms are available from the EDU website.

Contacts and location:

EDU Web: <http://education.fce.unsw.edu.au>

EDU Location: Room 2039, Level 2 Quadrangle Building

EDU services are free and confidential and are available to students of the Faculty of Commerce and Economics.

Other UNSW Support

In addition to the EDU services, the UNSW Learning Centre provides academic skills support services for students. The Learning Centre is located on Level 2 of the Library and can be contacted by Phone: 9385 3890 or through their website: www.lc.unsw.edu.au .

Students experiencing problems of an academic or personal nature are encouraged to contact the Counselling Service at UNSW. This service is free and confidential and run by professional counsellors. The Counselling Service is located on Level 2, Quadrangle East Wing, and can be contact on 9385 5418.

Those students who have a disability that requires some adjustment in their teaching and learning environment are encouraged to discuss their study needs with the Lecturer in Charge or with the Equity Officer (Disability) prior to, or at the commencement of, their course. The Equity and Diversity Unit can be contacted through 9385 4734 or www.equity.unsw.edu.au/disabil.html .

Students should be aware of Faculty Occupational Health and Safety policies and expectations; see:

www2.fce.unsw.edu.au/nps/servlet/portalservice?GI_ID=SystemLoggedOutInheritableArea&maxWnd=_Staff_Info_OHS

CONTINUAL COURSE IMPROVEMENT

Each year feedback is sought from students and other stakeholders 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

(http://www.ltu.unsw.edu.au/ref4-5-1_catei_process.cfm) is one of the ways in which student evaluative feedback is gathered.

LECTURE SCHEDULE

(This is the planned schedule and may be subject to minor adjustment)

Lecture 1:	Course Introduction and Descriptive Statistics
Topics:	Course Introduction Frequency Distributions Histograms Measures of location and dispersion Scatter plots – an introduction to correlation and regression
Lecture 2:	Probability Theory
Topics:	Probability Definitions Axioms of Probability Compound Events Probability Trees Conditional Probability and Bayes' Theorem
Lecture 3:	Random Variables
Topics:	Probability Distributions for Random Variables Expected Values and Variances of Random Variables Use of Variance to measure risk The Binomial Distribution The Normal Distribution The Normal Approximation to the Binomial Distribution
Lecture 4:	Sampling Theory and Estimation
Topics:	Estimators and their properties Central limit theorem Sampling distributions Point and Interval Estimation The 't' Distribution
Lecture 5:	Hypothesis Testing
Topics:	Testing Hypotheses for means and proportions Type I and II Errors The Power of a Test
Lecture 6	Bivariate Distributions
Topics:	The Chi Square Independence Test Correlation coefficient Correlation and simple linear regression Statistical aspects of regression Prediction Multiple regression