



Never Stand Still

Australian School of Business

Economics

# ECON5257

## INTRODUCTORY STATISTICS AND DATA ANALYSIS

### Course Outline Semester 2, 2012

### Part A: Course-Specific Information

Students are also expected to have read and be familiar with **Part B Supplement to All Course Outlines**. This contains Policies on Student Responsibilities and Support, Including Special Consideration, Plagiarism and Key Dates.

# Table of Contents

<b>1</b>	<b><u>STAFF CONTACT DETAILS</u></b>	<b>1</b>
1.1	Communications with staff	1
<b>2</b>	<b><u>COURSE DETAILS</u></b>	<b>1</b>
2.1	Teaching Times and Locations	1
2.1.1	Class Hours	1
2.1.2	Lecture and Tutorial Times and Locations	1
2.2	Units of Credit	1
2.3	Summary of Course	2
2.4	Aims and Relationship to Other Courses	2
2.5	Student Learning Outcomes	2
<b>3</b>	<b><u>LEARNING AND TEACHING ACTIVITIES</u></b>	<b>2</b>
3.1	Approach to Learning and Teaching in the Course	2
3.2	Learning Activities and Teaching Strategies	3
<b>4</b>	<b><u>ASSESSMENT</u></b>	<b>3</b>
4.1	Formal Requirements	3
4.2	Assessment Details	4
4.3	Midsession Exam	4
4.4	Assignment	4
4.4.1	Submission Procedure for Assignment	5
4.4.2	Late Submission of Assignment	5
4.5	Final Exam Format	5
4.6	Quality Assurance	5
<b>5</b>	<b><u>COURSE EVALUATION AND DEVELOPMENT</u></b>	<b>5</b>
<b>6</b>	<b><u>COURSE RESOURCES</u></b>	<b>5</b>
<b>7</b>	<b><u>COURSE SCHEDULE</u></b>	<b>6</b>
7.1	Lecture Schedule	6
7.2	Tutorial Schedule	7

# 1 STAFF CONTACT DETAILS

Lecturer-in-charge: **Shiko Maruyama**  
Room: Quadrangle Building, Level 3, room 3116  
Telephone Number: 9385 3386  
Email: s.maruyama@unsw.edu.au  
Consultation Times: Wednesdays 1:00-4:00pm (or by appointment)

## 1.1 Communications with staff

The Lecturer-in-charge is responsible for the overall direction and content of the course. You should feel free to contact your lecturer about any academic matter. However, it is strongly encouraged, for efficiency purposes, that all enquiries about the subject material be made at lectures or tutorials or during consultation times. Discussion of course subject material will not be entered into via lengthy emails.

Email correspondence on administrative matters (e.g. advising inability to attend tutorial) will be responded to within 24 hours, but not over weekends.

# 2 COURSE DETAILS

## 2.1 Teaching Times and Locations

### 2.1.1 Class Hours

This is a half-semester course. There is a 2 hour lecture per week and a 1 hour tutorial per week.

### 2.1.2 Lecture and Tutorial Times and Locations

Lectures start on 11 September and finish on 16 October 2012. The time and location is Tuesday 14.00 to 16.00 in Electrical Engineering Building room G25 (K-G17-G25).

Tutorials start on Tuesday 18 September and finish on Tuesday 23 October 2012 (see *note below*). The groups and times are:

Tuesday from 17:00 - 18:00 in Quad 1048  
Wednesday from 17:00 - 18:00 in Quad 1047  
Wednesday from 18:00 - 19:00 in Quad 1047

**NOTE: Wednesday tutorials scheduled for 24 October will be moved to Tuesday 23 October between 14.00 to 16.00, and held in Electrical Engineering G25.**

## 2.2 Units of Credit

This course is worth 3 units of credit.

## 2.3 Summary of Course

Topics covered include: understanding data, probability and probability distributions, sampling distributions, introduction to statistical inference, correlation and regression analysis. The course also aims to provide familiarity with the use of Excel spreadsheet software for data analysis and problem solving.

## 2.4 Aims and Relationship to Other Courses

The aim of this course is to provide students with an introduction to basic statistical tools and quantitative methods that are useful in understanding the type of data encountered in business. Importantly, it will provide a framework for approaching business and economic problems, and experience in learning from associated data.

## 2.5 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 business/economic issues.
4. To provide benefits to students in terms of the ability to use statistical principles in 'rational' decision-making.

## Graduate Attributes

Learning Outcomes	ASB Graduate Attributes	Attribute No.
1, 2, 3, 4	Critical thinking and problem solving	1
1, 2, 3, 4	Communication	2
1, 2, 3, 4	Teamwork and leadership	3
1, 2, 3, 4	Social, ethical and global perspectives	4
1, 2, 3, 4	In-depth engagement with relevant disciplinary knowledge	5
1, 2, 3, 4	Professional skills	6

# 3 LEARNING AND TEACHING ACTIVITIES

## 3.1 Approach to Learning and Teaching in the Course

The philosophy underpinning this course and its Teaching and Learning Strategies are based on "Guidelines on Learning that Inform Teaching at UNSW". These guidelines may be viewed at: [www.guidelinesonlearning.unsw.edu.au](http://www.guidelinesonlearning.unsw.edu.au). Specifically, the lectures, tutorials and assessment have been designed to appropriately challenge students and support the achievement of the desired learning outcomes. A climate of inquiry and dialogue is encouraged between students and teachers and among students (in and out of class). The lecturers and tutors aim to provide meaningful and timely feedback to students to improve their learning outcomes.

## 3.2 Learning Activities and Teaching Strategies

The examinable content of the course is defined by the content of lectures, the corresponding textbook references given in the lectures, and the content of the tutorial program.

### *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 real life examples to which the concepts and methods can be applied.

### *Tutorials*

The purpose of tutorial meetings is to enable students to raise questions about difficulties encountered in their studies. *Students should not expect another lecture, but must come prepared with questions and contributions of their own.* To facilitate this, a set of exercises is assigned each week.

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 exercises and on the computer assignment. However, presentation of the latter should be done individually.  
**Identically presented computer assignments will be given a mark of zero.**

### *Out-of-Class Study*

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” strategy (on which the provision of the course materials is based) might include:

- Reading of the relevant chapter(s) of the text and any readings **before the lecture**. This will give you a general idea of the topic area.
- Attendance at lectures. Here the context of the topic in the course and the important elements of the topic are identified. The relevance of the topic should be explained.
- Attending tutorials and attempting the tutorial questions.

### *Computing*

During this course, students will use the spreadsheet program EXCEL to solve statistical problems on topics discussed in lectures. EXCEL output will be discussed in tutorials and lectures and will be required in order to complete the assignment. Computing is an integral component of this course and you are expected to become proficient in EXCEL.

## 4 ASSESSMENT

### 4.1 Formal Requirements

In order to pass this course, you must:

- achieve a composite mark of at least 50 out of 100; and

- make a satisfactory attempt at ALL assessment tasks. This means attendance at 80% of tutorials and a mark of at least 40% in all assessment items.

**AND**

- Achieve a satisfactory level of performance in the final exam. This means a minimum mark of 46 per cent. Any student having an overall mark of 50 or more but less than 46 per cent in the final examination will be given an UF grade (unsatisfactory fail).

## 4.2 Assessment Details

Assessment Task	Weighting	Learning Outcomes assessed	Length	Due Date
Mid-session Exam	20%	1,2,4	40 minutes	<b>Tuesday 2 October 2012</b>
Assignment	20%	1,2,4	1000 words	<b>Second-last tutorial class (16-17 October)</b>
Final Exam	60%	1,2,3,4	Two hours	<b>Thursday 25 October 2012</b>
Total	100%			

## 4.3 Midsession Exam

There will be a 40-minute “mid-session” examination on **Tuesday 2 October, 2012**. This examination will be held during the regular lecture time. After the exam, we will resume the normal lecture. Subject material from Lectures 1 and 2 will be examined.

There will be **NO supplementary tests** offered for the mid-session exam. You should make every effort to take the mid-session exam. Students who fail to attend the examination will need to apply for Special Consideration.

In cases of serious illness, students will need full and convincing documentation of that illness. Students who are found to be genuinely too ill to have attended the exam will have their mark in the final exam re-weighted to include the mark reserved for the missed test. In all other cases of non-attendance students will receive a grade of zero. **Employment obligations or holiday plans of any kind are not acceptable reasons for absence from any test/examination.**

Applications for special consideration must be **lodged online through myUNSW within 3 working days of the assessment** (Log into myUNSW and go to My Student Profile tab > My Student Services channel > Online Services > Special Consideration). Then submit the originals or certified copies of your supporting documentation and a completed Professional Authority form (pdf - download here) to Student Central.

## 4.4 Assignment

There will be one assignment which is due by the second-last tutorial class. Assignment topics, format and marking criteria are set out in a separate document on the course website.

#### 4.4.1 Submission Procedure for Assignment

- The assignment must be printed in MSWORD or PDF format and handed in to the tutor at the due time and date.
- Relevant computer output can be attached in the back.
- Email submission is unacceptable. Late submission will not be marked.
- All assignments must include the *Assignment Cover Sheet* as their first page. This can be downloaded from the course web site.

#### 4.4.2 Late Submission of Assignment

If you fail to submit your assignment before the deadline you will be given a mark of zero. Special consideration does not apply to late submission of assignments. You have a number of weeks to complete the assignment and it is your risk if you leave it to the last few days to complete.

#### 4.5 Final Exam Format

Students should note that, given changes in the course content, past exam papers for this subject may be misleading. As outlined in 3.2 above all material covered in the lectures and tutorial program is examinable. The Final Exam for the course has been scheduled on **Thursday, October 25, 2012, at 2:00pm-4:10pm. The location is to be announced later.**

#### 4.6 Quality Assurance

The ASB is actively monitoring student learning and quality of the student experience in all its programs. A random selection of completed assessment tasks may be used for quality assurance, such as to determine the extent to which program learning goals are being achieved. The information is required for accreditation purposes, and aggregated findings will be used to inform changes aimed at improving the quality of ASB programs. All material used for such processes will be treated as confidential and will not be related to course grades.

### 5 COURSE EVALUATION AND DEVELOPMENT

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 is one of the ways in which student evaluative feedback is gathered. You are strongly encouraged to take part in the feedback process.

### 6 COURSE RESOURCES

The website for this course is on UNSW Blackboard at:

<http://lms-blackboard.telt.unsw.edu.au/webapps/portal/frameset.jsp>

The textbook for this course is: Berenson, M., Levine, D., Krehbiel, T., Watson, J., Jayne, N., Turner, L. and O'Brien, M. 2010, *Basic Business Statistics: Concepts and Applications*, 2nd ed., Pearson Education Australia, Frenchs Forest, NSW.

It is also available as an e-book from [www.mypearsonstore.com.au](http://www.mypearsonstore.com.au)

## 7 COURSE SCHEDULE

### 7.1 Lecture Schedule

LECTURE SCHEDULE		
Lecture	Topic	Reference
Lecture 1 11 September	<b>Course Introduction and Descriptive Statistics</b> Frequency Distributions and Histograms Measures of Location, Variability and Correlation	Berenson 2.1-2.6, 3.1-3.5
Lecture 2 18 September	<b>Probability Theory</b> Permutations and Combinations; Probability Definitions Axioms of Probability ; Compound Events; Probability Trees ; Conditional Probability	Berenson 4.1-4.5
Lecture 3 25 September	<b>Random Variables and Probability Distributions</b> Probability Distributions for Random Variables Expected Values and Variances of Random Variables The Binomial Distribution ; The Uniform Distribution; The Normal Distribution	Berenson 5.1-5.3, 6.1-6.4
Lecture 4 2 October	<b>Statistical Inference I: Sampling Distributions and Estimation (Mid-session Examination at beginning of lecture class)</b> Sampling distributions ; Central limit theorem Estimators and their properties Point and Interval Estimation Interval Estimation of the Population Mean	Berenson 7.1-7.3, 8.1
Lecture 5 9 October	<b>Statistical Inference II: Hypothesis Testing</b> Concepts of Hypothesis Testing Testing Hypotheses for the Population Mean Type I and II Errors ; The 't' Distribution Statistical Inference for the Population Mean using the t-distribution Statistical Inference for the Population Proportion	Berenson 8.2-8.4, 9.1-9.5
Lecture 6 16 October	<b>Regression Analysis</b> An introduction to Simple Linear Regression Analysis Statistical Inference for the Simple Regression Model Residual analysis	Berenson 12.1- 12.5,12.7



## 7.2 Tutorial Schedule

TUTORIAL SCHEDULE		
Date	Topic	Reference
18/19 September	Tutorial 1 Exercises	Lecture 1 Material
25/26 September	Tutorial 2 Exercises	Lecture 2 Material
2/3 October	Tutorial 3 Exercises	Lecture 3 Material
9/10 October	Tutorial 4 Exercises	Lecture 4 Material
16/17 October	Tutorial 5 Exercises and COMPULSORY Assignment due in class (20%)	Lecture 5 Material
23 October	Tutorial 6 Exercises	Lecture 6 Material