ECON1203
Business and Economic Statistics

Course Outline
Summer School, 2015/2016

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 key information on Business School policies (including those on plagiarism and special consideration), student responsibilities and student support services.
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1 STAFF CONTACT DETAILS

Course coordinator: Lee Lee Ooi (email: l.l.ooi@unsw.edu.au)
Tutor: Cecilia Chiu (email: yi-hsuan.chiu@unsw.edu.au)

1.1 Communications with staff
The course coordinator is responsible for the overall direction and academic content of the course. The tutor will assist in marking and some moderation of online activities.

The course coordinator should be contacted by email in the case of administrative queries. All course content queries should be raised through the Moodle interface.

2 COURSE DETAILS

2.1 Course Content
This is an online course, taught in 6 units corresponding to the six weeks of the semester starting 7 December, 2015.

2.2 Units of Credit
The course is worth 6 units of credit.

2.3 Summary of Course
This course introduces students to basic statistical concepts and methods that are widely used in economics, finance, accountancy, marketing and, more generally, business. Emphasis is placed on applying statistical methods to draw inferences from sample data as an aid to informed decision-making. Course topics include: descriptive statistics, probability distributions, point and interval estimation of parameters, hypothesis testing, and regression models. Students will learn to solve statistical problems in an EXCEL spreadsheet environment. This course provides the basis for further study of statistical and econometric methods.

2.4 Presumed Knowledge
Students entering the BCom and BEc are expected to be familiar with HSC Mathematics and this material will not be explicitly covered or revised in this course. If you have not studied HSC mathematics in New South Wales, knowledge of the following topics is essential: algebra (including logarithms, exponentials, functions and graphs), basic probability, derivatives and differentiation rules, and simple integration.

Students also need to practice in their own time using EXCEL, which is the environment in which most problems will be worked through. There will not be any official training or class for Excel as part of the course.

It should be emphasized that this is an online course. A proper internet connection and reliable internet access are essential throughout the course. Students with slow or intermittent internet connections are encouraged not to enrol. No special consideration will be granted for internet problems, including the inability to upload files in a timely manner.
2.5 Aims and Relationship to Other Courses

This course is offered as part of the first year core in the BCom and BEc degrees within the UNSW Business School. It aims to give students the basic skills and knowledge for data analysis that will be used for further study in all other disciplines in Business School. It is a prerequisite for all higher-level courses in econometrics and business statistics offered by the School of Economics. These courses are designed to equip students with more advanced statistical and other quantitative skills that are in demand by employers in the public and private sectors.

2.6 Student Learning Outcomes

The Learning Outcomes for this course describe what you should be able to do by the end of this course if you participate fully in learning activities and successfully complete the assessment items. The Learning Outcomes in this course also relate to some of the overall Program Learning Goals and Outcomes for all undergraduate coursework students in the Business School. Program Learning Goals are what we want you to BE or HAVE by the time you successfully complete your degree. You demonstrate this by achieving specific Program Learning Outcomes - what you are able to DO by the end of your degree.

For more information on the Undergraduate Program Learning Goals and Outcomes, see Part B of the course outline.

The following table shows how your Course Learning Outcomes relate to the overall Program Learning Goals and Outcomes, and indicates where these are assessed:

<table>
<thead>
<tr>
<th>Program Learning Goals and Outcomes</th>
<th>Course Learning Outcomes</th>
<th>Course Assessment Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course helps you to achieve the following learning goals</td>
<td>On successful completion of the course, you should be able to:</td>
<td>This learning outcome will be assessed in the following items:</td>
</tr>
</tbody>
</table>
| 1 Knowledge                        | Explain basic statistical methods and know when to apply appropriate methods in practical scenarios. Implement statistical tools and skills to interpret characteristics of data relevant to problems in economics and business. Use Excel’s graphical and statistical capabilities. | • Tutorial problems  
• Assignments  
• Feedback quizzes  
• Exam |
| 2 Critical thinking and problem solving | Formulate and solve real problems amenable to statistical analysis using data that arise in economics and business and using the methods appropriate to the problem and data available. | • Tutorial problems  
• Assignments  
• Feedback quizzes  
• Exam |
| 3a Written communication | Construct written work which is logically and professionally presented. Convey statistical ideas and results so that non-experts can understand the key outcomes of analysis. | • Assignments  
• Exam |
| 3b Oral communication | Communicate ideas in a succinct, clear and understandable manner. | • Assignments |
| 4 Teamwork | Work collaboratively to complete a task. | • Assignments |


5a. Ethical, environmental and sustainability considerations
Identify and assess environmental and sustainability considerations in problems in economics and business.
Understand the ethical responsibilities associated with reporting statistical results.

• Assignments
• Exam

5b. Social and cultural awareness
Not specifically addressed in this course.
Not specifically addressed in this course.

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. Specifically, the content and assessments have been designed to appropriately challenge students and support the achievement of the desired learning outcomes. A climate of inquiry and discussion is encouraged between students and teachers and among students via participation in the online Discussion Forum. The course co-ordinator and the tutor aim to provide meaningful and timely feedback to students to help improve learning outcomes.

3.2 Learning Activities and Teaching Strategies
The examinable content of the course is defined by the textbook chapters referred to in the course schedule below; the content of the lecture slides; the content of the tutorial program and all other material contained in the Moodle.

You are expected to read assigned chapters in the text and to review lecture slides each week, as we move through each topic. To get the most out of your online learning time, you are advised to work through the relevant lecture material and textbook chapters assigned for a given week and participate in the discussion forum. Links to all materials required for learning, with the exception of the text itself, will be provided through the Moodle site.

The purpose of your offline learning is to provide a logical structure for the topics that make up the course; to develop a basic grasp of the important concepts and methods of each topic; and to start engaging with relevant examples to which the concepts and methods are applied.

You will also be working offline on each of the four assignments and online for each of the three feedback quizzes, described in more detail below, which are to be completed by each student individually.

You may also find other resources provided on the Moodle site to be of use.

General Strategy

An “ideal” weekly study strategy (on which the provision of course materials is based) might look like the following:

1. Read the relevant chapter(s) of the text after going through the lecture slides and participate in the Blackboard Collaborate session 1 of the week. Complete your reading and review by the middle of the week.
2. Attempt the tutorial questions (available via Moodle) on your own. This helps you to identify issues that need to be clarified or resolved. You might need to go back to the textbook or lecture slides for more clarification.

3. Participate in the Blackboard Collaborate session 2 of the week for review of the chapter(s) and tutorial discussions.

4. Visit MyStatLab and attempt the questions assigned for that week’s topics.

5. Participate in discussion forum via Moodle.

6. (if desired) Revisit MyStatLab and make a second attempt at the questions assigned for that week’s topics.

7. (if applicable) Complete and upload the assignment, and complete the online feedback quiz for that week.

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 the assessment tasks; and
- achieve a minimum score of 50% for the final exam

STUDENTS MUST PASS THE FINAL EXAM IN ORDER TO PASS THIS COURSE.

4.2 Assessment Details

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Weightage</th>
<th>Learning Outcomes assessed</th>
<th>Length</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>5%</td>
<td>1,2,3,4</td>
<td>A set of problems</td>
<td>Week 2 (by 12 midnight Sydney time, Saturday, 19 December 2015)</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>5%</td>
<td>1,2,3,4</td>
<td>A set of problems</td>
<td>Week 3 (by 12 midnight Sydney time, Saturday, 9 January 2016)</td>
</tr>
<tr>
<td>Assignment 3</td>
<td>5%</td>
<td>1,2,3,4</td>
<td>A set of problems</td>
<td>Week 4 (by 12 midnight Sydney time, Saturday, 16 January 2016)</td>
</tr>
<tr>
<td>Assignment 4</td>
<td>5%</td>
<td>1,2,3,4</td>
<td>A set of problems</td>
<td>Week 5 (by 12 midnight Sydney time, Saturday, 23 January 2016)</td>
</tr>
<tr>
<td>Feedback Quiz 1</td>
<td>3%</td>
<td>1,2,3,4</td>
<td>Less than 1 hour</td>
<td>Week 2 (by 12 midnight Sydney time, Sunday, 20 December 2015)</td>
</tr>
<tr>
<td>Feedback Quiz 2</td>
<td>3%</td>
<td>1,2,3,4</td>
<td>Less than 1 hour</td>
<td>Week 4 (by 12 midnight Sydney time, Sunday, 17 January 2016)</td>
</tr>
<tr>
<td>Feedback Quiz 3</td>
<td>4%</td>
<td>1,2,3,4</td>
<td>Less than 1 hour</td>
<td>Week 6 (by 12 midnight Sydney time, Sunday, 31 January 2016)</td>
</tr>
<tr>
<td>Completion of MyStatLab homework</td>
<td>10%</td>
<td>1,2,3,4</td>
<td>Question sets, see details below</td>
<td>By 12 midnight Sydney time, Saturday, 30 January 2016</td>
</tr>
<tr>
<td>Final exam</td>
<td>60%</td>
<td>1,2,3,4</td>
<td>2 hours</td>
<td>University Exam Period</td>
</tr>
<tr>
<td>Online participation BONUS MARKS</td>
<td>Up to 5 marks</td>
<td>1,2,3,4</td>
<td>N/A</td>
<td>Optional; see below</td>
</tr>
</tbody>
</table>
4.3 Assignments
There will be four written assignments, due in Weeks 2, 3, 4, and 5. The assignments will cover the material you learned during the week, and each assignment carries 5 marks.

4.4 Assignment Submission Procedure
You must submit one electronic copy of each completed assignment, with the filename “<yourstudentnumber>_Assignment<n>” (where <n> is 1, 2, 3, or 4), via Turnitin, on the Moodle website. All assignments will be checked for plagiarism. All instances of plagiarism will lead to heavy penalties, such as automatic failure of the course.

4.5 Late Submission of Assignments
There is a deadline for submission of each piece of assessment in this course. Assignments will not be graded after the deadline.

Late submission will be considered only in extreme circumstances. Any student who for reasons of serious illness or misadventure cannot submit before the submission date, will need full and convincing documentation of that illness or misadventure, such as a valid medical certificate which covers the period extending from 4 days prior to the submission deadline, until that deadline. In cases where students have applied for special consideration, assignments must still be submitted within five days of the submission date or they will not be marked.

Applications for special consideration for late submission must be drawn to the attention of the course coordinator within 3 days of the submission date.

Special consideration will only allow a waiver of part of the late penalty: up to one day’s penalty may be waived for each two days of documented illness or misadventure. Satisfactory performance in the course to that point will be taken into account by the course coordinator in deciding whether to approve an application for consideration.

Employment obligations or holiday plans of any kind are not acceptable reasons for absence from any examination, or for tardiness in uploading assignments.

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.

4.6 Feedback quizzes
Three on-line quizzes will be conducted throughout the course. These quizzes will consist of several questions which will be randomly assigned when students logon. Students may logon to any computer and take the quiz at any time from Monday to Sunday of the assigned week. There is a time limit of one hour, but a well-prepared student should take considerably less time to complete each quiz. Students will be permitted to have a second attempt at each quiz should they desire. If they do have a second attempt then the highest mark will be recorded.

The purpose of the quizzes is to test knowledge of course material covered in previous weeks. The three quizzes will be held in week 2 (covering lecture material from week 1), week 4 (covering lecture material from weeks 2-3), and week 6 (covering lecture material from weeks 4-6).
These quizzes will provide timely feedback for students, allowing them to identify weaknesses in their understanding and to undertake remedial action in preparation for the final exam. This feedback will be missing if students do not treat these quizzes as assessments taken under normal supervised examination conditions and thus it will not be in their interests to do otherwise.

There are no supplementary quizzes under any circumstances. You are given two attempts to cover for any unseen technical problems that may cause you to lose one attempt.

4.7 MyStatLab homework

Each week’s topics will be addressed in a selection of questions on MyStatLab (linked to the textbook). You are encouraged to attempt these questions each week. Students who make genuine attempts at the MyStatLab question sets for each topic will earn 10 marks towards their course grade. Students who do not make a genuine attempt at each week’s MyStatLab questions will be awarded either 5 marks or nothing, depending on their apparent level of effort and engagement in attempting the questions.

Records of each student’s attempts at MyStatLab questions are retained by the system across the entire session. A comprehensive set of these records will be forwarded to the course coordinator for purposes of calculating course marks at 12 midnight Sydney time on Saturday, 30 January 2016. All MyStatLab resources will continue to be available until the final exam.

4.8 Final Exam Format

The final exam, to be held on campus at UNSW, will cover the examinable material of the entire course. The exam will last for 2 hours and previous exams (of 2 hours format) will provide a good guide to content.

Be aware that the final exam counts for sixty percent of your final mark in this course, and that you must pass the final exam in order to pass the course.

4.9 Participation Bonus

To encourage online discussion, a participation bonus is available for students who make a positive contribution to the online presence of this course. In particular, constructively and respectfully engaging with their peers and actively participating in tackling tutorial questions in discussion forum will be rewarded. Students may receive up to a total of 5 bonus marks for active online participation. These marks will be added directly to their final exam mark. In principle, these marks are available to every student: there is no pre-set maximum fraction of the class who will be selected to receive them.

4.10 Quality Assurance

The Business School 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 Business School programs. All material used for such processes will be treated as confidential.

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 Moodle at: http://moodle.telt.unsw.edu.au

The Moodle site provides access to announcements, discussion forum, link to MyStatLab, facilities for uploading assignments, softcopies of course-specific files uploaded by staff (including this course outline), and other resources relevant to the course.

The textbook for this course is:

Students may also find the following books useful as extra reading:

7 COURSE SCHEDULE
The formal teaching periods are from 7-18 December 2015 and 4 January - 29 January 2016, but assistance will continue to be available during the ‘study period’ of 1-5 February 2016.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture/Material</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7 Dec 2015</td>
<td>Lectures 1 and 2 Sharpe Chapters 1, 2, 3 and 4</td>
<td>- Introduction to statistics and distributions - Descriptive statistics - Introduction to simple regression</td>
</tr>
<tr>
<td></td>
<td>14 Dec 2015</td>
<td>Lectures 3 and 4 Sharpe Chapters 8, 5, 6.1-6.3</td>
<td>- Data collection and sampling - Introduction to probability distributions - Random variables, discrete probability distributions, expectations</td>
</tr>
<tr>
<td></td>
<td>4 Jan 2016</td>
<td>Lectures 5 and 6 Sharpe Chapters 6.4-6.5 &amp; 7</td>
<td>- Binomial distribution - Continuous random variables - Normal distribution - Introduction to estimation</td>
</tr>
<tr>
<td>4</td>
<td>11 Jan 2016</td>
<td>Lectures 7 and 8 Sharpe Chapters 11, 12</td>
<td>- Sampling distributions, central limit theorem - Interval estimation - Hypothesis testing</td>
</tr>
<tr>
<td></td>
<td>18 Jan 2016</td>
<td>Lectures 9 and 10 Sharpe Chapters 9, 10, 15 and 16</td>
<td>- Hypothesis testing continued - Simple linear regression</td>
</tr>
<tr>
<td>6</td>
<td>25 Jan 2016</td>
<td>Lectures 11 and 12 Sharpe Chapters 17, 18 and 14</td>
<td>- Inferences about the regression line - Multiple regression - Chi-squared and other tests</td>
</tr>
</tbody>
</table>