Unit Outline Semester 2 2011
Faculty of Information Sciences and Engineering

Statistical Analysis & Decision Making G 6275
This Unit Outline must be read in conjunction with:

a) UC Student Guide to Policies, which sets out University-wide policies and procedures, including information on matters such as plagiarism, grade descriptors, moderation, feedback and deferred exams, and is available at (scroll to bottom of page)
http://www.canberra.edu.au/student-services

b) UC Guide to Student Services, and is available at (scroll to bottom of page)
http://www.canberra.edu.au/student-services

c) Any additional information specified in section 6h.

1: General Information

1a Unit title: Statistical Analysis & Decision Making G

1b Unit number: 6275

1c Teaching period and year offered: Semester 2, 2011

1d Credit point value: 3

1e Unit level: G

1f Name of Unit Convenor and contact details

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Name of Unit Moderator and contact details

Scott Murray
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1g Administrative contact details

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2: Academic Content

2a Unit description and learning outcomes

Syllabus

This is an introductory unit in statistics designed for students in commerce and management discipline areas. Emphasis is placed on the application of statistical techniques to those disciplines. Topics include populations and samples; the presentation and interpretation of data; measures of central tendency and variability; index numbers; simple linear regression and correlation; an introduction to time series; basic probability; the binomial, Poisson and normal distributions; and estimation and hypothesis testing. Analyses will be carried out using Microsoft Excel.

Learning Outcomes

Upon completion of this unit, students will be expected to

1. understand the nature and consequences of natural variability in data;
2. express a problem in statistical terms;
3. summarise data graphically and statistically, either manually or via a computer package;
4. understand and interpret economic index numbers;
5. understand the nature of a time series and how it is analysed;
6. estimate and test parameters in simple situations; and
7. understand basic statistical terminology in published material.

2b Generic skills and attributes

By the end of their course, graduates will have developed skills and attributes in many generic skills and attributes. This unit concentrates on:

1. Communication
The ability to present knowledge, ideas and opinions effectively and communicate within and across professional and cultural boundaries

2. Analysis and inquiry
The ability to gather information, and to analyse and evaluate information and situations in a systematic, creative and insightful way

3. Problem solving
The ability to apply problem-solving processes in novel situations; to identify and analyse problems then formulate and implement solutions

4. Working independently
The ability to plan their own work, be self-directed

2c Prerequisites and/or co-requisites

Basic mathematics, approx to Year-10 High School standard.
3: Delivery of Unit and Timetable

3a Delivery mode

The delivery of the unit is in traditional mode, that is on-campus in standard semesters with weekly lectures and tutorials throughout the semester.

You should attend two lectures (i.e. three hours) and a tutorial (i.e. one hour) per week.

From week 1 until week 14 there are two lectures
- Tuesday 12:30pm – 14:30pm 14B1
- Wednesday 9:30am – 10:30am 14B1

From week 2 the tutorial groups each meet for one hour per week starting at a range of times during the week. You should enrol for the tutorials on-line through MyUC. The tutorial lists may be viewed through MyUC. Consult these lists to find which tutorial you have been allocated to. You do not need to register for a computer lab as you are automatically placed in the computer lab of the same number as the tutorial.

In weeks 3, 4 and 5 the tutorials will be laboratory sessions on the use of Excel. Your usual tutor will give these sessions in a computer laboratory in Building 11. You may use Excel in computer laboratories 11A45, 11A46, 11A48, 11A49, 11B37 and 11B39 in Building 11 at any time when they are not being used for classes. The first four labs are available 24 hours a day, 7 days a week.

Each week, there is a set of tutorial exercises for you to practise. They are for self-study and are not marked. It is very important that you complete these exercises every week. The questions in the tests and final exam will be very similar to these exercises. If you are not able to complete them, you should ask your tutor for help. Note that the tutors will not attempt to provide solutions to all the tutorial exercises, but to those requested by the students. A full set of solutions will be posted on the unit website on Moodle after the tutorials.

In addition to tutorials this semester, we are offering an innovative PALs (Peer Assisted Learning Sessions) program, running weekly alongside lectures and tutorials. This program will be taken by specially chosen senior students who have done well in the unit previously and undergone special training to suit them for their role in facilitating your learning through group activities and discussion, so you will know how and what to learn in this unit. Results and student comments from UC and other universities in Australia and around the world who have implemented this program are very positive.

There are no tutorials or PALs in week 1 or during the class free period.

If you have difficulties in mastering any of the revision material, preparing for your tutorial or if you still do not understand the material after your tutorial then you should drop in to the Maths and Stats Help sessions in the Learning Centre in 11A33 and 11A34. Statistics tutors will be available at certain times to help you. A timetable can be found on the unit website and at

Major dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tuesday</td>
<td>Lectures begin</td>
</tr>
<tr>
<td>2</td>
<td>Tuesday</td>
<td>Tutorials begin</td>
</tr>
<tr>
<td>4</td>
<td>Friday</td>
<td>Assignment 1 due</td>
</tr>
<tr>
<td>5-6</td>
<td>Friday</td>
<td>On-line test 1 open</td>
</tr>
<tr>
<td>7</td>
<td>Friday</td>
<td>Assignment 2 due</td>
</tr>
<tr>
<td>8</td>
<td>All week</td>
<td>Class free period</td>
</tr>
<tr>
<td>9</td>
<td>Wednesday</td>
<td>In-class test</td>
</tr>
<tr>
<td>11</td>
<td>Friday</td>
<td>Assignment 3 due</td>
</tr>
<tr>
<td>13-14</td>
<td>Friday</td>
<td>On-line test 2 open</td>
</tr>
<tr>
<td></td>
<td>Exam session</td>
<td>TBA</td>
</tr>
</tbody>
</table>

3b Timetable of activities

This should be taken as a guide only. Slight variations may occur.

<table>
<thead>
<tr>
<th>Week</th>
<th>Activity</th>
<th>Reference (pages in Black et al.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Data collection</td>
<td>§1.1-1.3 pp 1 –7, §7.1 pp 234 – 247.</td>
</tr>
<tr>
<td>2</td>
<td>Tables, charts and graphs</td>
<td>§1.4 pp 8 – 9, §2.1-2.2 pp 16 – 39.</td>
</tr>
<tr>
<td>3</td>
<td>One variable: summarising numerical data</td>
<td>§3.1-3.4 pp 52 – 93</td>
</tr>
<tr>
<td>6</td>
<td>Probability: Discrete distributions</td>
<td>§5.1-5.4 pp 154 – 182.</td>
</tr>
<tr>
<td>8</td>
<td>Class free period</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Hypothesis testing: Two populations</td>
<td>§10.1-10.4 pp 360 – 397, but not confidence intervals.</td>
</tr>
<tr>
<td>12</td>
<td>Regression analysis</td>
<td>Chapter 13 pp 502 – 541.</td>
</tr>
<tr>
<td>13</td>
<td>Index numbers and time series</td>
<td>§16.6 pp 688 – 697.</td>
</tr>
<tr>
<td>14</td>
<td>Revision</td>
<td></td>
</tr>
</tbody>
</table>
4: Unit Resources

4a List of texts/readings
You should have access to a copy of

(a) Morton, RH "Comprehensive Statistical Tables: Volume 1 Basic " UC.


These two books are available in the University Bookshop. They are also available in the Library on three-hour loan.

4b Materials and equipment
A scientific pocket calculator will be useful for routine calculations. Very elaborate calculators are not necessary but it is essential to have a model that will calculate standard deviations and simple regressions. Some calculators of this type have keys marked $\Sigma x$, $\Sigma y$, $\Sigma x^2$, $\Sigma y^2$ and $s_x$, $s_y$ or $\sigma_x$ and $\sigma_y$. Scientific calculators are available at newsagents, Dick Smith and some department stores. One or two workshops will be held on the use of scientific calculators early in the semester.

Graphics calculators are allowed in tests and in the final exam.

Each student should have access to the Internet and to a printer. If you do not have a computer at home you can use the computers in Buildings 10 and 11. The unit website is located on Moodle. The website may make use of pdf files. If you are accessing this page from outside the University you will need a copy of the Acrobat Reader plug-in to view the files. You can download it for free at www.adobe.com. You should read the notices on the website at least twice a week.

4c Unit website
The unit website can be reached through Moodle. You should visit the website regularly, at least once or twice a week. The solutions to the tutorials will be posted Friday every week, with other updates and announcements whenever as needed. A large amount of material to help you with the unit is available.
5: Assessment

5a Assessment overview

<table>
<thead>
<tr>
<th>Assessment item (including exams held in the exam period)</th>
<th>Due date of assignments</th>
<th>Weighting (total to equal 100%)</th>
<th>Addresses learning outcome(s)</th>
<th>Addresses generic skill(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>5:30pm Friday week 4</td>
<td>5%</td>
<td>(1), (2) and (3)</td>
<td>All</td>
</tr>
<tr>
<td>On-line test 1</td>
<td>Friday week 5-Monday week 6</td>
<td>10%</td>
<td>(1), (2), (3) and (7)</td>
<td>All</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>5:30pm Friday week 7</td>
<td>5%</td>
<td>(1), (2) and (7)</td>
<td>All</td>
</tr>
<tr>
<td>In-class test</td>
<td>9:30 am Wednesday week 9</td>
<td>15%</td>
<td>(1), (2), (3) and (6)</td>
<td>All</td>
</tr>
<tr>
<td>Assignment 3</td>
<td>5:30 pm Friday week 11</td>
<td>5%</td>
<td>(3), (6) and (7)</td>
<td>All</td>
</tr>
<tr>
<td>On-line test 2</td>
<td>Friday week 13-Monday week 14</td>
<td>10%</td>
<td>(6)</td>
<td>All</td>
</tr>
<tr>
<td>Final exam</td>
<td>Examination period</td>
<td>50%</td>
<td>(1) - (7)</td>
<td>All</td>
</tr>
</tbody>
</table>

5b Details of each assessment item

i. Two on-line tests: 20%

There will be two 50-minute tests, each worth 10%, to be done on-line.

ii. One in-class test: 15%

There will be a 45-minute test, worth 15%, held in the lecture on Wednesday week 9. Students should bring their pens, pencils etc, calculators and their student id cards to this test. No other materials are allowed. Formulae and statistical tables will be supplied. Absence from this in-class test needs to be explained and must be supported with documentary evidence. You must contact the unit convener within three working days after the missed test.

iii. Three assignments: 15%

There will be 3 assignments, each worth 5%.

Assignment 1 will feature similar problems to the tutorial exercises. Assignments 2 and 3 will also feature similar problems to the tutorial exercises, in addition to Excel exercises that are based on content covered in the labs.

All 3 assignments should be submitted by 5:30pm on the due date and placed in the “Business Statistics/SADMG” mailbox in Building 11, or handed to the lecturer at the beginning of the lecture before the due date. Late assignments, without an acceptable reason, will be penalised at a rate of 10% per day or part of day (including weekends) late. Assignments will receive zero marks if submitted 2
weeks after the due date. Note that the printers being out of paper is not an acceptable reason for a late assignment.

vi. **End-of-semester examination: 50%**

This three-hour examination will be held in the University examination period.

In this examination calculators may be used, statistical tables will be supplied but **NOT** formulae. **TWO SIDES OF A4 NOTES** will be permitted. The notes may be handwritten or typed.

The combined raw score is scaled to a numerical grade consistent with the descriptors for P, CR, DI and HD

<table>
<thead>
<tr>
<th>Grade</th>
<th>Numerical Grade Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>NX</td>
<td>0 – 49</td>
</tr>
<tr>
<td>P</td>
<td>50 – 64</td>
</tr>
<tr>
<td>CR</td>
<td>65 – 74</td>
</tr>
<tr>
<td>DI</td>
<td>75 – 84</td>
</tr>
<tr>
<td>HD</td>
<td>85 and above</td>
</tr>
</tbody>
</table>

5c **Special assessment requirements**

In order to pass this unit you must achieve a mark of at least 45% in the final exam and an overall mark of at least 50% of the total available marks with the weightings shown as above. In the case of illness, misadventure or unavoidable commitments students should contact the unit convenor as soon as possible. Students should consult the guide to student services for details on the Academic Board's Special Consideration policy and the procedures by which a student may seek alternative arrangements.

5d **Supplementary assessment**

To be eligible to undertake supplementary assessment in a unit, a student must:
- be enrolled in their final semester of study;
- have failed a single unit, with a final mark between 45-49% in the unit;
- have passed all other units undertaken in that semester.

The failed unit must be the final unit required to complete the academic requirements of their course. For the University policy on supplementary assessments refer to [https://guard.canberra.edu.au/policy/policy.php?pol_id=2901](https://guard.canberra.edu.au/policy/policy.php?pol_id=2901)

5e **Academic Integrity**

Students have a responsibility to uphold University standards on ethical scholarship. Good scholarship involves building on the work of others and use of others work must be acknowledged with proper attribution made. Cheating, plagiarism, and falsification of data are dishonest practices which contravene academic values.
5f Text-matching software

This is not relevant to Business Statistics.

6: Student Responsibility

6a Workload

The amount of time you will need to spend on study in this unit will depend on a number of factors including your prior knowledge, learning skill level and learning style. Nevertheless, in planning your time commitments you should note that for a 3cp unit the total notional workload over the semester or term is assumed to be 150 hours. These hours include time spent in classes. The total workload for units of different credit point value should vary proportionally. For example, for a 6cp unit the total notional workload over a semester or term is assumed to be 300 hours.

6b Special needs

Students who need assistance in undertaking the unit because of disability or other circumstances should inform their Unit Convener or UC AccessAbility (formerly the Disabilities Office) as soon as possible so the necessary arrangements can be made.

6c Attendance requirements

It is expected that students will attend lectures and tutorials.

6d Withdrawal

If you are planning to withdraw please discuss with your unit convener. Please see this link for further information on deadlines.

6e Required IT skills

It is expected that students have some familiarity with the use of a computer e.g. print unit materials, access the unit website, etc.

6f Costs

The textbooks together cost just over $130, however using the online version of the book by Black et al. (2010) is considerably cheaper. A suitable scientific calculator can be purchased for around $25.

6g Work Integrated Learning

This unit is available for study as part of a number of courses. Please consult your course convenor for work-integrated learning opportunities within your course.
6h Additional information

Any announcements made at lectures will also be shown on the unit website. These announcements are deemed to be known by all students within two days of being posted to the website.

It is strongly recommended that you make use of the sessions in the Student Learning Resource Centre in Building 11 if you are experiencing any difficulties with Business Statistics. A time-table is available on the unit website.

In response to student feedback in previous semesters the assessment in Business Statistics has changed to accommodate a variety or learning styles and to encourage good time management by students.

7: Student Feedback

All students enrolled in this unit will have an opportunity to provide anonymous feedback on the unit at the end of the Semester via the Unit Satisfaction Survey (USS) which will be presented to you on MYUC. Your lecturer or tutor may also invite you to provide more detailed feedback on their teaching through an anonymous in-class questionnaire administered through the University’s Teaching and Learning Centre (TLC).

8: Authority of this Unit Outline

Any change to the information contained in Section 2 (Academic content), and Section 5 (Assessment) of this document, will only be made by the Unit Convener if the written agreement of Head of Discipline and a majority of students has been obtained; and if written advice of the change is then provided on the unit site in the learning management system. If this is not possible, written advice of the change must be forwarded to each student enrolled in the unit at their registered term address. Any individual student who believes him/herself to be disadvantaged by a change is encouraged to discuss the matter with the Unit Convener.