

THE UNIVERSITY OF SYDNEY
Semester 2, 2009

Information Sheet for **MATH1005 Statistics**

Web Site

It is important that you check the Junior Mathematics web site regularly. It may be found through WebCT, or by following links from the University of Sydney front page, or by going directly to

<http://www.maths.usyd.edu.au/u/UG/JM/>

Important announcements relating to Junior Mathematics are posted on the site, and there is a link to the MATH1005 page. Material available from the MATH1005 page may include information sheets, the Junior Mathematics Handbook, notes, exercise sheets and solutions, and previous examination papers.

Lectures

There are 3 different lecture streams. You should attend one stream (that is, two lectures per week), as shown on your personal timetable.

Times	Location	Lecturer	Consultation
8 am Mon & Tue	E Ave Aud	Dr M Stewart, Carslaw room 818	Tue & Wed, 1-2pm
11 am Mon & Tue	E Ave Aud	Dr M Stewart, Carslaw room 818	Tue & Wed, 1-2pm
11 am Mon & Tue	Carslaw Lect Th 157	Prof E Seneta, room 812	Mon, 1-2pm

Lectures run for 13 weeks. The last lecture will therefore be on Tuesday 27 October.

Tutorials

Tutorials (one per week) start in week 2. You should attend the tutorial given on your personal timetable. Attendance at tutorials will be recorded. Your attendance will not be recorded unless you attend the tutorial in which you are enrolled.

Tutorial sheets

The tutorial sheets for a given week will be available by the Friday of the previous week. **You must take the current week's sheet to your tutorial.** The sheet must be printed from the web. Solutions to tutorial exercises for week n will usually be posted on the web by the afternoon of the Friday of week n .

Assessment

Your final raw mark for this unit will be calculated as follows:

65%: Exam at end of semester 2.

30%: Quiz mark.

5%: Assignment mark.

Your final raw mark is then scaled to produce your final mark. Marks are scaled so that the distribution of grades is consistent with the quality of the class, and the difficulty of the unit, as required by the University.

Examination

There is one examination of 1.5 hours' duration during the examination period at the end of semester 2. Further information about the exam will be made available at a later date.

Quizzes

There are two quizzes, each worth 15% of your final raw mark. Quizzes are held during tutorials, in **week 8** (beginning 14 September) and **week 12** (beginning 19 October).

You should put those dates in your diary now! You must sit for the quiz during the tutorial in which you are enrolled. Your quiz mark will not be recorded if you sit for the quiz in a tutorial in which you are not enrolled (unless you have made an arrangement with the Student Office). If you miss a quiz, then you must go to the Student Office as soon as possible afterwards.

Assignments

One assignment will be marked, and will be worth 5% of your final raw mark. The assignment will be due on **Thursday 3 September**. Please see page 26 of the Junior Mathematics Handbook for details relating to the submission of assignments.

Text book

M C Phipps and M P Quine. *A Primer of Statistics*. Prentice Hall, Sydney, NSW, Australia, (fourth edition) 2001.

Any questions?

Before you contact us with any enquiry, please check the FAQ page:

<http://www.maths.usyd.edu.au/u/UG/JM/FAQ.html>

Where to go for help

For administrative matters, go to the **Mathematics Student Office, Carslaw room 520**.

For help with statistics, see your lecturer, or your tutor. Lecturers guarantee to be available during their indicated office hour, but may well be available at other times as well.

If you are having difficulties with statistics due to insufficient background, you should go to the Mathematics Learning Centre (Carlsaw room 441).

Week-by-week outline

Week	Topics	Pages
1	Introduction. Type of data. Histograms. Rounding down/off. Stem-leaf displays.	1- 8 8-12
2	5-number summaries. Boxplots. Distribution shapes. Revision of summation notation. Summary statistics (mean and sd).	13-19 20-24
3	Computer summaries. Correlation. Linear regression. Computer output. Residual plots.	25-27 28-32
4	Classical probability. Counting. Sampling without replacement. Rel freq. Mut. excl. and indep. events. Probability rules.	43-47 47-51
5	Integer-valued rv's. Binomial. Binomial tables. Mean.	56-57 58-59
6	Expectation. Mean and variance. Discussion of cts rvs. Normal rvs and use of tables.	60-61 66-68
7	More on the normal. The Central Limit Theorem.	70-73 73-75
8	Normal approximation to the Binomial. Notion of sampling distributions. Hypothesis testing. P-values.	75-77 84-87
9	Tests for proportions. Sign tests.	88-91 91-93
—————M-I-D-S-E-M-E-S-T-E-R—B-R-E-A-K—————		
10	More on P-values. Z-test.	96-97
11	<i>t</i> - tables and one sample <i>t</i> -tests. Paired <i>t</i> -test. Paired sign test (revision).	98-99 100
12	Two sample <i>t</i> -tests. Discussion of comparative studies. Confidence intervals (μ).	101-102 103-105
13	Confidence intervals (p). Further topics (e.g. Chi-squared tests.). Revision.	105

Tutorials commence in week 2

It is recommended that you bring the textbook “A Primer of Statistics” to both tutorials and lectures.