

THE UNIVERSITY OF SYDNEY  
Semester 1, 2009

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Information Sheet for **MATH1015 Biostatistics**

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**Web Site**

It is important that you check the Junior Mathematics web site regularly.

It may be found by following links from the University of Sydney front page, or from WebCT, 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 MATH1015 page.

The MATH1015 page includes this information sheet, and some on-line resources will be added throughout the semester. Make sure you check the MATH1015 page regularly.

**Lectures**

There are 2 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	Wallace	S. Peiris, Carslaw room 819	Mondays & Tuesdays, 1-2pm
11am Mon & Tue	Wallace	S. Peiris, Carslaw room 819	Mondays & Tuesdays, 1-2pm

Lectures run for 13 weeks, and the last lecture will be on Tuesday 2 June.

**Tutorials**

Tutorials (one per week) start in week 1. Attendance at tutorials is essential as your participation in the tutorials will contribute to your assessment. You must attend the tutorial given on your personal timetable, since your participation cannot be recorded in a tutorial in which you are not enrolled. Some tutorial problems are based on the computer software GenStat.

**Tutorial exercise sheets**

The tutorial sheets for a given week will be available on the MATH1015 web page. **You must print out the current week's tutorial sheet from the web, and take it to your tutorial with you.** Solutions to tutorial exercises for week  $n$  will usually be posted on the web on 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 1.
- 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 1. Further information about the exam will be made available at a later date.

## Quizzes

Two quizzes will be held during tutorials, in the **weeks beginning 30 March and 18 May**. Each quiz is worth 15% of your final raw mark. 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.

## Assignments

One assignment will be marked, and will be worth 5% your final raw mark. The assignment will be due on **Thursday 7 May**. Please see page 26 of the Junior Mathematics Handbook for details relating to the submission of assignments.

Another set of assignment questions will be made available, but these will not be marked, and will not count towards your final mark. Solutions and a marking scheme will be provided, and you are encouraged to mark the questions yourself, or ask a friend to mark it for you (using the marking scheme provided). This will provide you with valuable feedback on how you are handling the material, and help you prepare for the exam.

## Text book

Rosner, *Fundamentals of Biostatistics*,

Custom version for The University of Sydney: *MATH1015 Biostatistics*, compiled by Shelton Peiris [CENGAGE Learning, ISBN: 9780170182706 cp 0488].

Available from the *CO-OP BOOKSHOP*.

See the Junior Mathematics Handbook for other references.

## Where to go for help

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

For help with mathematics, 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 mathematics due to insufficient background, you should go to the Mathematics Learning Centre (Carslaw room 455).

## Week-by-week outline

Page numbers refer to Rosner, *Fundamentals of Biostatistics*.

Use: MATH1015 BIOSTATISTICS - Custom Publishing for The University of Sydney  
CENGAGE Learning - ISBN: 9780170182706 cp 0488 - Compiled by Shelton Peiris

Week	Chapters and Sections from the Textbook	Pages
<b>1</b>	L1: Ch2, Descriptive statistics: 2.1-2.2 (Omit 2.3) L2: 2.4 Introduction to GenStat. Examples.	6–15 17–21
<b>2</b>	L1: 2.5, 2.7 (Omit 2.6) L2: 2.8-2.12, Computer outputs.	21–27 28–37
<b>3</b>	L1: Examples/Applications. L2: Ch3, Probability: 3.1-3.3	43–48
<b>4</b>	L1: 3.4-3.5, Independence. Probability rules (Omit 3.6-3.11). L2: Ch4, Discrete Probability Distributions: 4.1-4.4	48–52 81–87
<b>5</b>	L1: 4.5-4.8 (Omit 4.6, 4.7). The Binomial distribution. Use of binomial tables . L2: 4.9, Expectations. Mean and variance of binomial distribution. (Omit 4.10- 4.13)	87–100 100–101
<b>Quiz 1 in your tutorial class</b>		
<b>6</b>	L1: Ch5, Continuous Probability Distributions: 5.1-5.4 L2: 5.5-5.6 (Omit Dependent RV, p141-145).  —————M-I-D-S-E-M-E-S-T-E-R—B-R-E-A-K—————	122–135 135–141
<b>7</b>	L1: 5.7, Normal approx. to the Binomial (Omit 5.8). L2: Ch6, Estimation: 6.1-6.5 (Omit 6.3, 6.4). Central Limit Theorem (CLT)	145–150 166–187
<b>8</b>	L1: t distribution (Omit 6.6-6.10). L2: Ch7, Hypothesis Testing: Introduction to hypothesis testing. P-values.7.1-7.3 (Omit type I, type II errors and power)	187– 194 226–238
<b>9</b>	L1: 7.4 (Omit 7.5-7.9). L2: 7.10, One-sample test for a proportion (Omit 7.11, 7.12).	238–245 270–277
<b>Assignment due</b>		
<b>10</b>	L1: Ch8, Two-Sample Inference: 8.1-8.2 (Omit 8.3). L2: 8.4 (Omit 8.5-8.12).	296–302 304–308
<b>11</b>	L1: Ch10, Categorical Data: 10.1 (Omit 10.2-10.5) 10.6 (Omit bottom of pp430 to top of pp438) L2: 10.7 (Omit 10.8) .	385–386 426–430 438–441
<b>Quiz 2 in your tutorial class</b>		
<b>12</b>	L1: Ch11, Regression and Correlation: 11.1-11.3 (Omit 11.4, 11.5). L2: 11.6	464–473 487–491
<b>13</b>	L1: 11.7 (Omit 11.8-11.13). L2: Revision.	492-496