THE UNIVERSITY OF SYDNEY
Semester 2, 2018

Information Sheet for **MATH1905 Statistics (Advanced)**

Websites: It is important that you check both the Junior Mathematics website and the MATH1905 website regularly.

Junior Mathematics webpage: `http://sydney.edu.au/science/maths/u/UG/JM/`
MATH1905 webpage: `http://sydney.edu.au/science/maths/u/UG/JM/MATH1905`

Both sites may be accessed through the Learning Management System (Canvas):

`https://canvas.sydney.edu.au/courses/9862`.

Important announcements relating to Junior Mathematics are posted on the Junior Mathematics page. On the MATH1905 page you will find online resources and other useful links. Announcements regarding assessment tasks will be made on this page at various times throughout the semester.

Lectures:

Times	Location	Lecturer	Office
11am Mon	Chemistry LT1	Dr Michael Stewart	Carslaw 818
11am Tue	Quadrangle, General Lecture Theatre K2.05		

Lectures run for 13 weeks. The first lecture will be on Monday 30 July. The last lecture will be on Tuesday 30 October.

Consultation times: Consultation times will be posted on the MATH1905 webpage.

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 and exercise sheets: The question sheets for a given week will be available on the MATH1905 webpage. Solutions to tutorial exercises for week n will usually be posted on the web by the afternoon of the Friday of week n.

Textbooks *Statistics* (4th Edition) – Freedman, Pisani, and Purves (2007). All students should have access to the text book, which is available in 3 forms: 1) E-text $65 (www.wileydirect.com.au/buy/statistics-4th-international-student-edition/), 2) hard copy (Co-op Bookshop), and 3) the Library.

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

70%:	Exam at end of Semester 2.
10%:	Quiz 1 mark (using the better mark principle).
10%:	Quiz 2 mark (using the better mark principle).
5%:	Assignment 1 mark.
5%:	Assignment 2 mark.

The *better mark principle* means that for each quiz, the quiz counts if and only if it is better than or equal to your exam mark. If your quiz mark is less than your exam mark, the exam mark will be used for that portion of your assessment instead. For example, if your quiz 1 mark is better than your exam mark while your quiz 2 mark is worse than your exam mark, then the exam will count for 80%, quiz 1 will count for 10%, and the assignments will count for 10% of your overall mark. The assignment marks count for 10% regardless of whether they are better than your exam mark or not.

Final grades are returned within one of the following bands:

High Distinction (HD), 85–100: representing complete or close to complete mastery of the material; **Distinction (D), 75–84:** representing excellence, but substantially less than complete mastery; **Credit (CR), 65–74:** representing a creditable performance that goes beyond routine knowledge and understanding, but less than excellence; **Pass (P), 50–64:** representing at least routine knowledge and understanding over a spectrum of topics and important ideas and concepts in the course.

A student with a passing or higher grade should be well prepared to undertake further studies in mathematics which are dependent on this unit of study.

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 on the website.

Quizzes: Quizzes will be held during tutorials. You must sit for the quiz during the tutorial in which you are enrolled, unless you have permission from the Student Services Office, issued only for verifiable reasons. Otherwise, your quiz mark may not be recorded. Quizzes will only be returned in the tutorial you sat the quiz and must be collected by week 13.

Assignments: There are two assignments, which must be submitted electronically, **as PDF files only**, in Turnitin (an internet-based plagiarism-prevention service), via the Learning Management System (Canvas) website by the deadline. Note that your assignment will not be marked if it is illegible or if it is submitted sideways or upside down. It is your responsibility to check that your assignment has been submitted correctly (check that you can view each page). Late submisions will receive a mark of zero.

Assessment and feedback schedule:

Task	Available	Deadline/date	Latest extension*	Feedback
Assignment 1	Fri 10 Aug	11:59 pm Mon 20 Aug	11:59 pm Mon 27 Aug	9am Wed 29 Aug
Quiz 1		12–13 Sep (Week 7)		19–20 Sep (Week 8)
Assignment 2	Fri 14 Sep	11:59 pm Tue 2 Oct	11:59 pm Tue 9 Oct	9 am Wed 10 Oct
Quiz 2		24–25 Oct (Week 12)		31 Oct–1 Nov (Week 13)

* Extensions for assignments are only possible for students registered with Disability Services or for approved Special Consideration or Special Arrangements applications.

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

http://sydney.edu.au/science/maths/u/UG/JM/FAQ.html.

Where to go for help: For administrative matters, go to the *Student Services Office, Carslaw 520*. For help with mathematics, see your lecturer, your tutor, or use the Ed discussion forum (https://edstem.org). Lecturers guarantee to be available during their indicated office hours, but may be available at other times as well. You may also email questions about the subject to MATH1905@sydney.edu.au. Ensure that any emails that you send to this address contain your name and SID, because anonymous emails will be ignored.

Objectives: The unit aims to introduce elementary but important statistical concepts without being bogged down by too many mathematical formulae. The textbook has been designed so that an intelligent but nonmathematical reader can follow the reasoning with the aid of many clear examples. However, it also provides (through extensive footnotes) extra mathematical explanations in various places; we shall examine many of these and also some extra mathematical supplements not presented in the text. We shall also learn to use the R computing language/environment to implement the procedures.

Outcomes: Students who successfully complete this unit should be able to:

- explain the difference between a randomised controlled experiment and an observational study, in particular the limitations of the latter;

- produce and interpret various graphical and numerical summaries of univariate and bivariate data;

- determine when and how to use the normal curve to approximate frequencies and probabilities;

- determine when and how to use least-squares regression and correlation to describe a bivariate relationship;

- show mathematically why binomial probability histograms are approximately normal;

- use a simple statistical model ("box model") to explain the random behaviour of sample sums and means;

- use box models as the basis for various statistical tests;

- apply the methods learnt to various real-world examples and draw sensible, practical statistical conclusions from them.

Proposed week-by-week outline: Most lectures will focus on one or more particular chapters of the text; a few will look at material not covered in the text.

Week	Monday	Tuesday
1	Intro/Chapter 1	Chapters 1 and 2
2	Chapter 3	Chapter 4
3	Chapter 5	Chapter 6
4	Chapter 8	Chapter 9
5	Chapter 10	Chapter 11
6	Chapter 12	Geometry of Regression
7	Chapters 13, 14 and 15	Chapter 16
8	Chapter 17	Chapter 18
9	Labour Day Holiday	Central Limit Theorem
10	Chapter 20	Chapter 21
11	Chapter 23	Chapter 26
12	Chapter 28	Chapter 29
13	Revision	Revision

ADDITIONAL INFORMATION

Attendance: Unless otherwise indicated, students are expected to attend a minimum of 80% of timetabled activities for a unit of study, unless granted exemption by the Associate Dean.
For some units of study the minimum attendance requirement, as specified in the relevant table of units or the unit of study outline, may be greater than 80%.
The Associate Dean may determine that a student has failed a unit of study because of inadequate attendance.
Further details are available from the Science Undergraduate Handbook 2018: `http://sydney.edu.au/handbooks/science/coursework/faculty_resolutions.shtml` and the Science Postgraduate Handbook 2018: `http://sydney.edu.au/handbooks/science_PG`.

Online Components: This unit of study requires regular use of the University's Learning Management System (LMS). This could be either Blackboard or Canvas. Internet access is required to use the LMS.

Assessment Submission: Assessment tasks must be submitted by the due date. Submission will be online through the LMS unless instructed otherwise.

Compliance Statement All students must submit a signed statement of compliance with each piece of work submitted to the University for assessment, presentation or publication. A statement of compliance certifies that no part of the work constitutes a breach of the Academic Honesty in Coursework Policy 2015: `https://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/254&RendNum=0`.

This will be completed as part of the Turnitin assignment submission.

Late Submissions Work not submitted by the due date is not accepted.

Academic Dishonesty and Plagiarism Academic honesty is a core value of the University. Therefore, all students are required to act honestly, ethically and with integrity. Academic dishonesty is defined as any dishonest or unfair action taken in order to gain academic advantage. It also includes knowingly assisting another student to do this.
The University will not tolerate academic dishonesty or plagiarism, and will treat all allegations of academic dishonesty and plagiarism seriously.
Plagiarism is defined as presenting another persons work as ones own by presenting, copying or reproducing it without appropriate acknowledgement of the source.
Plagiarism includes presenting work for assessment, publication, or otherwise, that includes:

a. phrases, clauses, sentences, paragraphs or longer extracts from published or unpublished work (including from the internet) without appropriate acknowledgement of the source; or

b. the work of another person, without appropriate acknowledgement of the source and in a way that exceeds the boundaries of legitimate co-operation.

Further information is available in the Academic Honesty in Coursework Policy 2015: `https://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/254&RendNum=0`.

Similarity Detection Software Students should be aware that the University has authorised and mandated the use of the text-based similarity detecting software called Turnitin for all text-based written assignments. Turnitin searches for matches between text in your written assessment task and text sourced from the Internet, published works, and assignments that have previously been submitted for analysis. Further information regarding plagiarism detection is available in the Academic Honesty in Coursework Policy 2015: `https://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/254&RendNum=0`.

Academic Honesty Education Module (AHEM) All students commencing their study at the University of Sydney are required to complete the Academic Honesty Education Module. You will find the AHEM in your Learning Management System.

Special Consideration In the event of serious illness or misadventure which affects your preparation or performance in an assessment task, you may be eligible for Special Consideration. Further information is available at: `https://sydney.edu.au/students/special-consideration-and-arrangements.html`. You should *not* submit an application for Special Consideration or Special Arrangements for this unit of study

- if you are absent from a tutorial and there is no assessment associated with the missed tutorial, or

- if you miss a quiz, since the better mark principle applies.

The assessment category for the assignments is "Submitted Work".

Student Feedback: The Unit of Study Survey
At the completion of each Unit of Study, students are asked via email to complete an online survey to provide feedback on their experiences in that Unit of Study. This feedback is invaluable when reviewing curriculum design and implementation styles.

University Work, Health and Safety Policy: We are governed by the Work Health and Safety Act 2011, Work Health and Safety Regulation 2011 and Codes of Practice. Penalties for non-compliance have increased. Everyone has a responsibility for health and safety at work. The University's Work Health and Safety policy explains the responsibilities and expectations of workers and others, and the procedures for managing WHS risks associated with University activities.
General Laboratory Safety Rules

- No eating or drinking is allowed in any laboratory under any circumstances

- A laboratory coat and closed-toe shoes are mandatory

- Follow safety instructions in your manual and posted in laboratories

- In case of fire, follow instructions posted outside the laboratory door

- First aid kits, eye wash and fire extinguishers are located in or immediately outside each laboratory

As a precautionary measure, it is recommended that you have a current tetanus immunisation. This can be obtained from University Health Service (`http://www.unihealth.usyd.edu.au/`).
For more details please refer to Emergencies and safety on campus: `https://sydney.edu.au/students/emergencies-and-safety-on-campus.html`

Student Support Services:
A guide for new students:
`https://sydney.edu.au/students/browse.html?category=new-students&topic=getting-started`
Counselling and mental health support:
`https://sydney.edu.au/students/counselling-and-mental-health-support.html`
Disability Support:
`https://sydney.edu.au/students/disability-support.html`
International Student Support:
`https://sydney.edu.au/students/support-for-international-students.html`
Learning Services / Study Skills Support:
`https://sydney.edu.au/students/learning-services.html`
Student IT and online learning:
`https://sydney.edu.au/students/browse.html?category=student-it-and-online-learning&topic=online-learning`
Academic Writing:
`https://sydney.edu.au/students/writing.html`