

THE UNIVERSITY OF SYDNEY
Semester 2, 2009

Information Sheet for **MATH1014 Introduction to Linear Algebra**

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 MATH1014 page. Material available from the MATH1014 page may include information sheets, the Junior Mathematics Handbook, notes, exercise sheets and solutions, and previous examination papers.

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
10 am Mon & Tue	Carslaw 157	Weeks 1-6, 13: Ms J Henderson, room 710 Weeks 7-13: Mr N Saunders, room 807	Tues, 1-2pm Tues, 1-2pm in Carslaw 707A
11 am Mon & Tue	Wallace	Ms S Britton, room 534	Mon, 1-2pm

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

Text book

Linear Algebra: A Modern Introduction, by David Poole.
Available from the Co-op Bookshop.

Tutorials

Tutorials (one per week) start in week 1. You should attend the tutorial at the time 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.

The tutorial sheets for a given week will be available on the MATH1014 webpage 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.

Tutorial exercises may include exercises from the textbook. When that is the case, you will need to take your textbook (or a copy of the relevant pages) to the tutorial with you.

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 5 (beginning 24 August) and **week 10** (beginning 5 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 22 October**. Please see page 26 of the Junior Mathematics Handbook for details relating to the submission of assignments.

Where to go for help

For administrative matters, go to the **Mathematics 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 441).

Proposed week-by-week outline

Week	Topics	Text reference
1	Geometry and algebra of vectors	Section 1.1, pp 3–12
2	Length, dot product, cross product	Section 1.2, pp 15–23 Exploration, pp 45,46
3	Lines and planes	Section 1.3, pp 31–38
4	Code vectors and modular arithmetic	Section 1.4, pp 47–55
5	Systems of linear equations; elementary row operations	Sections 2.1, 2.2, pp 60–73
6	Gaussian and Gauss-Jordan Elimination; applications	Section 2.2, pp 73–81 Section 2.4, pp 102–114
7	Matrices	Section 3.1, pp 137–151 Section 3.2, p 153, pp 157–160
8	The inverse of a matrix	Section 3.3, pp 162–168
9	Markov chains Leslie population models	Section 3.7, pp 229–234 Section 3.7, pp 234–236
10	Introduction to eigenvalues and eigenvectors (one lecture only)	Section 4.1, pp 254–259
11	Determinants	Section 4.2, pp 263–266, 269–274
12	Eigenvalues and eigenvectors	Section 4.3, pp 290–293 Section 4.6, pp 328–330
13	Revision	