

Web Site

It is important that you check the Summer School web site for MATH1002 regularly. It may be found by following links from the University of Sydney front page or by going directly to

<http://www.maths.usyd.edu.au/u/UG/SS/SS1002/>

Important information and resources including tutorial sheets, solutions, the assignment, the sample quiz, and past exam papers will be made available on this web site.

Lectures

There are six weeks of lectures and there are four lectures each week. The first lecture will be on Thursday 10 January and the last lecture will be on Friday 15 February.

Weeks	Times	Location	Lecturer
1-3	10am & 11am Thu & Fri	Carslaw 175	Mr Jesse Sweeney, Carslaw 495
4-6	10am & 11am Thu & Fri	Carslaw 175	Mr Brad Roberts, Carslaw 485

Tutorials

There will be eleven tutorials. There will usually be two tutorials per week. Tutorials will be allocated on the first day of lectures, Thursday 10 January. You should attend the tutorial that you are allocated. The first tutorial will be on the second day of lectures, Friday 11 January.

Times	Location	Tutor
9am Thu & Fri	451	Mr Brad Roberts
12pm Thu & Fri	356	Mr Jesse Sweeney
12pm Thu & Fri	361	Mr Neil Saunders & Ms Shona Yu

The tutorial sheets will be available on the MATH1002 web site. **You must print out the current tutorial sheet from the web, and take it to your tutorial with you.**

Assessment

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

70% : Exam

20% : Assignment

10% : Quiz

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.

Exam

There is one exam of 1.5 hours duration during the exam period at the end of Summer School. More information about the exam will be made available at a later date.

Assignment

One assignment will be set and will be **due on Thursday 7 February (week 5)**. The assignment will be made available on the web at a later date.

Quiz

One quiz will be **held during the lecture at 10am on Thursday 31 January**. A sample quiz will be made available on the web at a later date.

Text book

David Easdown. *A First Course in Linear Algebra*. Available from the Co-op Bookshop.

Where to go for help

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

For help with mathematics, see either of your lecturers, or your tutor. Lecturers guarantee to be available for six hours (each) of consultation time during summer school, times and locations to be advised, but may be available at other times as well.

Course Outline

Week	Topics
1	Scalars and geometric vectors as objects having magnitude and direction. Addition: parallelogram rule and triangle rule. Examples: Position vectors of points in space, velocities, forces displacements. Geometry using vectors. Vectors in the plane and in space. Cartesian representation.
2	Scalar and dot product. Projection. Vector and cross product. Applications to trigonometry. Applications of vectors to equations of lines and planes Lines normal to planes in space; planes normal to lines in space; lines normal to lines in the plane.
3	Solving systems of linear equations by row reduced augmented matrix. Completely reduced matrices.
4	Matrix algebra, identity matrix, inverse matrices. Solving systems of linear equations using inverse matrices.
5	Determinants: expanding by the top row. Rules for evaluating determinants. Effect of elementary row operations on the determinant. Determinant of a product of square matrices. Determinant of the inverse of a matrix. Eigenvectors, eigenvalues.
6	Diagonalising matrices and applications.