

620-142 Mathematics B

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: 36 lectures (three per week), 11 one-hour tutorials (one per week) and 11 one-hour computer laboratory classes (one per week) Total Time Commitment: 120 hours
Prerequisites:	One of [07]620-120 (UMEP Maths for High Achieving Students), [07]620-121, [07]620-140 or [07]620-141.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Students may only gain credit for one of [07]620-122, 620-142, 620-156, 620-157, [05]620-192, [05]620-194 or [07]620-211.
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact upon their active and safe participation in a subject are encouraged to discuss this with the relevant subject coordinator and the Disability Liaison Unit.
Coordinator:	A/Prof C Hodgson
Subject Overview:	<p>This subject develops the concepts of vectors, matrices and the methods of linear algebra as tools for modern mathematics and introduces modular arithmetic. Students should develop the ability to use the methods of linear algebra and gain an understanding of methods of mathematical proof. Students will also gain experience in using a mathematical software system.</p> <p>Linear algebra topics include real n-space, vector spaces in general, axioms, linear independence, bases, dimension, inner products; linear transformations, matrix representation of a linear transformation, change of basis, rank, inverse, solution of linear equations; eigenvectors and eigenvalues, rotation matrices, diagonal, real symmetric and orthogonal matrices. Modular arithmetic topics include computation modulo n, division with remainder, mathematical induction and Euclid's Algorithm. Applications will be chosen from error correcting codes, cryptography, graphs and networks, and the classification of conics and quadric surfaces.</p>
Assessment:	Up to 36 pages of written assignments or project work due during the semester (20%); a 3-hour written examination in the examination period (80%).
Prescribed Texts:	None
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Notes:	<p>This subject is available for science credit to students enrolled in the BSc (pre-2008 degree only), BAsc or a combined BSc course.</p> <p>Students in the combined degree BE/BSc should note that credit exclusions exist between this subject and Engineering mathematics subjects. Refer to entries for 431-201 Engineering Analysis A and 431-202 Engineering Analysis B for details.</p>
Related Course(s):	Bachelor of Arts Bachelor of Engineering (Chemical) and Bachelor of Science

Bachelor of Engineering(Biochemical Engineering)and Bachelor of Science