

431-201 Engineering Analysis A

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Summer Term, - Taught on campus. Semester 1, - Taught on campus. Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: Thirty-six hours of lectures and 12 hours of tutorials Total Time Commitment: Not available
Prerequisites:	620-141 Mathematics A and 620-143 Applied Mathematics or equivalent
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	<p><p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.</p> <p>It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability</p></p>
Subject Overview:	<p>This subject introduces important mathematical concepts required in engineering. Students should develop an ability to apply vector space methods to the study of linear algebraic equations and linear transformations. Students will also learn to formulate and solve a range of decision-making problems by well-known algorithms. Students will develop an ability to solve linear and nonlinear difference equations. Students will develop an ability to use statistical methods to analyse empirical data. Students will gain experience in using a mathematical software system.</p> <p>Topics include vector spaces, linear systems of equations, matrix methods; networks, linear and integer programming, difference equations; and probability distributions, random variables hypothesis testing, linear regression.</p>
Assessment:	Up to 24 pages of written assignments (20%), a mid-semester test (10%) and a 3-hour end-of-semester written examination (70%).
Prescribed Texts:	None
Recommended Texts:	Information Not Available
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
Generic Skills:	<ul style="list-style-type: none"> # ability to apply knowledge of basic science and engineering fundamentals # ability to communicate effectively, not only with engineers but also with the community at large # in-depth technical competence in at least one engineering discipline

	<ul style="list-style-type: none"> # ability to undertake problem identification, formulation and solution # understanding of professional and ethical responsibilities and commitment to them # expectation of the need to undertake lifelong learning, capacity to do so # capacity for independent critical thought, rational inquiry and self-directed learning # intellectual curiosity and creativity, including understanding of the philosophical and methodological bases of research activity # profound respect for truth and intellectual integrity, and for the ethics of scholarship
Notes:	Students may only gain credit for one of the following groups of subjects (620-231 Vector Analysis and 620-232 Mathematical Methods) or (431-201 Engineering Analysis A and 431-202 Engineering Analysis B)
Related Course(s):	<p> Bachelor of Engineering (Biomedical) Biomechanics Bachelor of Engineering (Biomedical) Biocellular Bachelor of Engineering (Biomedical) Bioinformatics Bachelor of Engineering (Biomedical) Biosignals Bachelor of Engineering (Chemical Engineering) Bachelor of Engineering (Chemical and Biomolecular Engineering) Bachelor of Engineering (Chemical) and Bachelor of Arts Bachelor of Engineering (Chemical) and Bachelor of Commerce Bachelor of Engineering (Chemical) and Bachelor of Laws Bachelor of Engineering (Civil Engineering) Bachelor of Engineering (Civil) and Bachelor of Arts Bachelor of Engineering (Civil) and Bachelor of Commerce Bachelor of Engineering (Civil) and Bachelor of Laws Bachelor of Engineering (Civil) and Bachelor of Science Bachelor of Engineering (Computer Engineering) Bachelor of Engineering (Electrical Engineering) Bachelor of Engineering (Engineering Management) Chemical Bachelor of Engineering (Engineering Management) Civil Bachelor of Engineering (Engineering Management) Computer Bachelor of Engineering (Engineering Management) Electrical Bachelor of Engineering (Engineering Management) Environmental Bachelor of Engineering (Engineering Management) Software Bachelor of Engineering (Engineering Management) Mechanical & Manufacturing Bachelor of Engineering (Environmental Engineering) Bachelor of Engineering (Environmental) and Bachelor of Arts Bachelor of Engineering (Environmental) and Bachelor of Commerce Bachelor of Engineering (Environmental) and Bachelor of Laws Bachelor of Engineering (Environmental) and Bachelor of Science Bachelor of Engineering (Mechanical & Manufacturing) and Bachelor of Arts Bachelor of Engineering (Mechanical & Manufacturing) / Bachelor of Commerce Bachelor of Engineering (Mechanical and Manufacturing Engineering) Bachelor of Engineering (Mechatronics) and Bachelor of Computer Science Bachelor of Engineering (Software Engineering) Bachelor of Engineering (Mechanical & Manufacturing) and Bachelor of Laws </p>