

436-414 Optimisation

Credit Points:	12.50
Level:	4 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - Taught on campus. On campus only
Time Commitment:	Contact Hours: Twenty-four lectures and 24 hours of tutorial/projects/practice classes Total Time Commitment: 120 hours
Prerequisites:	431-201 Engineering Analysis A and 431-202 Engineering Analysis B; or 620-231 Vector Analysis and 620-232 Math Methods and 620-331 Applied PDE's.
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>
Coordinator:	Prof Saman Kumara Halgamuge
Subject Overview:	Optimisation is an essential component of engineering due to its need in engineering practice. Selected methods of modelling and optimisation covered in the subject include nature-inspired optimisation methods, mathematical programming, dynamic programming and Markov processes.
Objectives:	Upon completion, students should be able to model and solve a range of decision-making problems in Mechanical, Biomedical and Mechatronic engineering by applying the techniques of mathematical programming, stochastic modelling and Optimisation.
Assessment:	One 3-hour end-of-semester examination (70%); one written project report of up to 6000 words with no more than 10 pages of supporting material (appendices, diagrams, tables etc) due towards the end of the semester (30%).
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:	# ability to apply knowledge of basic science and engineering fundamentals # in-depth technical competence in at least one engineering discipline

	<ul style="list-style-type: none"># ability to undertake problem identification, formulation and solution# ability to utilise a systems approach to design and operational performance# capacity for independent critical thought, rational inquiry and self-directed learning
Notes:	MCEN40002 Optimisation was formerly 436-414 Optimisation
Related Course(s):	Bachelor of Engineering (Engineering Management) Mechanical & Manufacturing Bachelor of Engineering (Mechanical & Manufacturing) & Bachelor of Science Bachelor of Engineering (Mechanical & Manufacturing) / Bachelor of Commerce Bachelor of Engineering (Mechanical and Manufacturing Engineering) Bachelor of Engineering (Mechatronics) and Bachelor of Computer Science