ELEN90026 Introduction to Optimisation

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2013, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 24 hours; Non-contact time commitment: 96 hours Total Time Commitment: 120 hours
Prerequisites:	Enrolment in a research higher degree(Masters or PhD) in Engineering
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
Contact:	Dr. Marcus Brazil Email: **brazil@unimelb.edu.au (https://mce_host/faces/htdocs/brazil@unimelb.edu.au)**
Subject Overview:	The course covers the foundations of convex optimisation. Topics will be selected from: convex sets and convex functions, convex optimisation problems, duality, unconstrained optimisation algorithms, constrained optimisation algorithms.
Objectives:	The aim of this subject is to give students a rigorous introduction to the mathematical tools of optimisation, as used across all of science, and particularly in engineering design. There will be an emphasis on both the theory and applications of optimisation techniques.
Assessment:	Continuous assessment of homework assignments, not exceeding 30 pages in total over the semester, worth 40%; Final examination at the end of semester, worth 60%. Students must pass the final exam in order to pass the subject.
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
Generic Skills:	# Ability to apply knowledge of basic science and engineering fundamentals; # In-depth technical competence in at least one engineering discipline; # Ability to undertake problem identification, formulation and solution; # Ability to utilise a systems approach to design and operational performance; # 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; # Openness to new ideas and unconventional critiques of received wisdom; # Profound respect for truth and intellectual integrity, and for the ethics of scholarship
Related Course(s):	Master of Philosophy - Engineering Ph.D.- Engineering