MCEN90033 Optimisation

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2016.
Time Commitment:	Contact Hours: Thirty two hours of lectures, tutorials and project work. Total Time Commitment: 120 hours
Prerequisites:	**Students who completed third year in 2010 will have taken MCEN30015 Thermofluids as a core subject instead of ENGR30001 Fluid Mechanic & Thermodynamics. An equivalent year-long version of MCEN90016 Mechanical Project will be available.**

Subject	Study Period Commencement:	Credit Points:
MAST20029 Engineering Mathematics	Summer Term, Semester 1, Semester 2	12.50

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 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. 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
Contact:	**saman@unimelb.edu.au (mailto:saman@unimelb.edu.au)**
Subject Overview:	Optimisation is an essential component of engineering due to its need in engineering practice. Selected methods of modelling and optimisation covered in this subject include nature-inspired optimisation methods, mathematical programming, dynamic programming and Markov processes.
Learning Outcomes:	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 exam (70%).One written project report of up to 6000 words with no more than 10 pages of supporting material (appendices, diagrams, tables etc) (30%).
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:	On completion of the subject students should have the following 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 • Capacity for independent critical thought, rational inquiry and self-directed learning.