

620-262 Decision Making

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: 36 lectures (three per week) and 11 tutorial/practice class hours (one per week) Total Time Commitment: 120 hours
Prerequisites:	620-261.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
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:	Dr S Zhou
Subject Overview:	<p>This subject introduces the essential features of decision-making situations encountered in operations research investigations. It develops a number of basic mathematical approaches to such situations and the techniques used to solve decision-making problems represented by these approaches. The theoretical foundations of these techniques are also considered. Students should develop the ability to construct formal mathematical models for practical decision-making situations; to solve a number of two-person games, including zero-sum and non-zero-sum games, cooperative and non-cooperative games; to use linear programming and dynamic programming techniques in the solution of a number of multi-objective optimisation problems; and to solve stochastic decision problems using techniques from probabilistic dynamic programming and Markov decision processes. This subject demonstrates the complexity of decision-making situations that may arise from business, economics, management, industry, etc., the extent and limitations of a number of operations research techniques used to solve such problems, and the important role that linear algebra, calculus and probability theory play in the development of these techniques.</p> <p>Selected topics from game theory, multi-criteria decision-making, decision trees and multi-stage decision making, probabilistic dynamic programming and Markov decision processes will be covered.</p>
Assessment:	Up to 24 pages of written assignments due during the semester (10%); a 3-hour written examination in the examination period (90%).
Prescribed Texts:	None
Breadth Options:	<p>This subject is a level 2 or level 3 subject and is not available to new generation degree students as a breadth option in 2008.</p> <p>This subject or an equivalent will be available as breadth in the future.</p> <p>Breadth subjects are currently being developed and these existing subject details can be used as guide to the type of options that might be available.</p> <p>2009 subjects to be offered as breadth will be finalised before re-enrolment for 2009 starts in early October.</p>
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees

Notes:	This subject is available for science credit to students enrolled in the BSc (pre-2008 degree only), BAsc or a combined BSc course.
Related Course(s):	Bachelor of Arts