620-361 Operations Research: Techniques

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: 36 lectures (three per week) and up to 12 practice classes (one per week) Total Time Commitment: 120 hours
Prerequisites:	620-261. Also recommended is one of 620-231, 620-233, 620-262.
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:	A/Prof F Vazquez-Abad
Subject Overview:	This subject develops problem-solving skills and sharpens analytical skills. Students will work in groups, tackling unfamiliar problems. Each team will plan their project work and deliver oral and written presentations. This subject introduces a number of basic techniques of operations research, selecting topics from nonlinear and parametric optimisation, and decision-tree, network and inventory models. It develops the formulation of operations research models and algorithms with application in production planning, scheduling, inventory management and capital budgeting. Students should develop skills in setting up and analysing operations research models for a number of planning problems; and competence in the use of computer packages for the solution of operations research problems. This subject demonstrates the factors and restrictions involved in building and using models for planning and management problems. Topics are selected from operations research models; formulation of planning and management problems, including linear programming models, scheduling models, inventory management and capital budgeting; and linear and nonlinear techniques, decision tree models, parametric optimisation and simulation. Use of computer packages and Internet resources is examined. Case studies and projects are undertaken.
Assessment:	Up to 24 pages of written assignments due during the semester (10%); a group project involving a written report of up to 15 pages due during the semester (15%) and a 20-minute oral presentation during the semester (10%); a 3-hour written examination in the examination period (65%).
Prescribed Texts:	None
Breadth Options:	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. This subject or an equivalent will be available as breadth in the future. 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. 2009 subjects to be offered as breadth will be finalised before re-enrolment for 2009 starts in early October.
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 Bachelor of Arts and Bachelor of Science Bachelor of Arts and Sciences Bachelor of Science