

620-361 Operations Research: Techniques

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 1, - Taught on campus. Lectures and practice classes.
Time Commitment:	Contact Hours: 36 one-hour lectures (three per week) and up to 12 one-hour practice classes (one per week) Total Time Commitment: 120 hours total time commitment.
Prerequisites:	620-261 (prior to 2009).
Corequisites:	None
Recommended Background Knowledge:	One of # <i>Vector Calculus</i> (620-231 Vector Analysis prior to 2009) # 620-233 (prior to 2009) # 620-262 (prior to 2009)
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:	Assoc Prof Felisa Josefina Vazquez-Abad
Subject Overview:	<p>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.</p> <p>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.</p> <p>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.</p>
Objectives:	.
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 potentially can be taken as a breadth subject component for the following courses:

	<p># Bachelor of Arts (https://handbook.unimelb.edu.au/view/2009/D09)</p> <p># Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2009/F04)</p> <p># Bachelor of Environments (https://handbook.unimelb.edu.au/view/2009/A04)</p> <p># Bachelor of Music (https://handbook.unimelb.edu.au/view/2009/M05)</p> <p>You should visit learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</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 Majors/Minors/Specialisations:	<p>Mathematics & Statistics Major</p> <p>Mathematics and Statistics (Financial Mathematics specialisation)</p> <p>Mathematics and Statistics (Operations Research specialisation)</p>