

620-362 Applied Operations Research

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - 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:	<i>Operations Research: Techniques</i> or 620-262 (prior to 2009)
Corequisites:	None
Recommended Background Knowledge:	620-131 (prior to 2008) or one of the computer science subjects 433-152 (prior to 2008), 433-172 (prior to 2008).
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 Heng Soon Gan
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 the technical issues involved in applying operations research principles, methods and algorithms in the solution of real-world problems, and the practical aspects of group projects in operations research. Students should develop the ability to apply various operations research methods, algorithms and software in the solution of practical problems; and to participate successfully in group projects in operations research, including preparing reports and giving presentations. This subject demonstrates the scope and limitation of operations research methods, algorithms and software as far as solving practical problems is concerned. It also exhibits the practical issues and difficulties involved in group projects in operations research.</p> <p>Practical and technical aspects of various operations research methods for linear programming, integer programming and combinatorial optimisation are covered, including topics selected from complexity, interior point methods, cutting planes, branch-and-bound, meta-heuristics, special heuristics and constraint logic programming. Students examine applications in vehicle routing, facility location, cutting stock, manpower planning, and machine scheduling and other logistics problems; and become familiar with operations research software.</p>
Objectives:	.
Assessment:	Up to 50 pages of written assignments due during the semester (35%); a group project during the semester with a 15-minute oral presentation and a written report of up to 50 pages (40%); a 90-minute written test held mid-semester (25%).
Prescribed Texts:	None
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # Bachelor of Arts (https://handbook.unimelb.edu.au/view/2009/D09) # Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2009/F04)

	<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:	Mathematics & Statistics Major Mathematics and Statistics (Operations Research specialisation)