620-158 Mathematics 2

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 2, - Taught on campus. Lectures and tutorials.
Time Commitment:	Contact Hours: 48 one-hour lectures (four per week), 11 one-hour tutorials (one per week). Total Time Commitment: 120 hours
Prerequisites:	620-157 Mathematics 1.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Students may only gain credit for one of [07]620-113, [07]620-123, [08]620-143, 620-155, 620-158 or [05]620-193.
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 participation are encouraged to discuss this with the subject coordinator and the Disability Liaison Unit.
Coordinator:	Associate Professor B Hughes
Subject Overview:	This subject develops fundamental concepts and principles in mathematical analysis. Students should gain skills in the practical techniques of differential calculus, integral calculus and infinite series, and study selected applications of these techniques in mathematical modelling. Heuristic and rigorous discussion of limits of real-valued functions, continuity and differentiability. Mean Value Theorem and applications, Taylor polynomials. Riemann integration, techniques of integration and applications, improper integrals. Infinite series. First order differential equations, second order linear differential equations with constant coefficients and selected applications.
Assessment:	Up to 25 pages of written assignments 10% (due during semester), a 45-minute written test 10% (held mid-semester), a 3-hour written examination 80% (in the examination period).
Prescribed Texts:	Thomas' Calculus (M. Weir, J. Hass and F. Giordano), 11th edn, Pearson, 2005.
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # Bachelor of Arts # Bachelor of Commerce # Bachelor of Environments # Bachelor of Music 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.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	In addition to learning specific skills that will assist students in their future careers in science, they will have the opportunity to develop generic skills that will assist them in any future career path. These include: # problem-solving skills: the ability to engage with unfamiliar problems and identify relevant solution strategies;

	# analytical skills: the ability to construct and express logical arguments and to work in abstract or general terms to increase the clarity and efficiency of analysis; # collaborative skills: the ability to work in a team; and # time management skills: the ability to meet regular deadlines while balancing competing commitments.
Notes:	This subject is available for science credit to students enrolled in the BSc (both pre-2008 and new degrees), BASc or a combined BSc course. This is the second subject of a three-subject sequence (620-157 Mathematics 1, 620-158 Mathematics 2 and 620-2xx Multivariable and Vector Calculus) for students with a very high level of achievement in VCE Specialist Mathematics 3/4 or equivalent. This subject sequence is equivalent, in content, to the four subjects 620-155, 620-156, 620-2xx Vector Calculus and 620-2xx Real Analysis with Applications, presenting some topics from a more advanced perspective.