620-205 Probability for Statistics

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), 11 one-hour tutorials (one per week) and 11 one-hour computer laboratory classes (one per week) Total Time Commitment: 120 hours
Prerequisites:	One of [07]620-120 (UMEP Maths for High Achieving Students), [07]620-121, [07]620-140, [07]620-141 and one of [07]620-131, [07]620-113, [07]620-123, [08]620-143, [05]620-193.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Students may only gain credit for one of 620-201, 620-205, 620-370, 431-325.
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 G Qian
Subject Overview:	This subject develops the probability theory that is necessary to understand statistical inference. Properties of probability are reviewed, random variables are introduced, and their properties are developed and illustrated through common univariate probability models. Models for the joint behaviour of random variables are introduced, along with conditional probability and Markov chains. Methods for obtaining the distributions of functions of random variables are considered along with techniques to obtain the exact and approximate distributions of sums of random variables. These methods will be illustrated through some well known normal approximations to discrete distributions and by obtaining the exact and approximate distributions of some commonly used statistics. Computer packages are used for numerical and theoretical calculations but no programming skills are required.
Assessment:	Up to 30 pages of written assignments due during the semester (20%); a 45-minute computer laboratory test held mid-semester (10%); a 3-hour written examination in the examination period (70%).
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. Students taking this subject must achieve a mark of H2B or above in the subject to proceed to 620-301. Students undertaking Actuarial Studies should take 620-201 instead of 620-205.