620-372 Applied Statistical Inference

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:	*Linear Models* and *Statistics.*
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Passing *Applied Statistical Inference* precludes subsequent credit for *Data Analysis 2*, 620-270 (prior to 2009) or *Applied Statistics for Optometrists*. Credit may not be gained for both *Applied Statistical Inference* and 300-315.
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 Guoqi Qian
Subject Overview:	This subject extends the theory of inference developed in 620-202 Statistics and demonstrates how it is applied in practice. Students will develop an understanding of the principles of statistical inference and will learn to use a number of important specific techniques in applied statistics. Topics covered include principles and fundamental results in estimation and hypothesis testing, including consistency, sufficiency, minimum variance unbiased estimation, likelihood methods and associated asymptotic theory, optimal tests and likelihood ratio tests; and generalised linear models. Application of the above methodologies to logistic regression (analysis of grouped and ungrouped binary data), log-linear models (analysis of two- and higher-dimensional contingency tables) and survival analysis (Kaplan-Meier estimates, parametric models, non-parametric models) is also studied.
Objectives:	.
Assessment:	Up to 50 pages of written assignments due during semester (20%); a 3-hour written examination in the examination period (80%).
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)**
	   # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2009/A04)**
	   # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2009/M05)**

	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
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 (Statistics specialisation)