620-374 Sampling and Forecasting

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 (1 per week) Total Time Commitment: 120 hours total time commitment.
Prerequisites:	*Statistics.*
Corequisites:	None
Recommended Background Knowledge:	None
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 Owen Dafydd Jones
Subject Overview:	This subject covers a range of important and generally applicable statistical methods. Students should develop the ability to employ these methods to implement a range of practically useful statistical analyses. The following three topics will be covered: # sample surveys: simple random sampling; stratified sampling - optimal allocation, post-stratification; cluster sampling; ratio estimation; # time series and forecasting: patterns in time series; simple methods for exploratory data analysis; smoothing techniques; decomposition, trends and seasonal variation; simple forecasting methods; models for time series: stationarity, autocorrelation, ARMA processes; estimation and model fitting; and # re-sampling methods: jack-knife and the bootstrap; and use of the bootstrap for exploring the sampling distribution of an estimator.
Objectives:	.
Assessment:	Up to 50 pages of written assignments during the 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 and Statistics (Financial Mathematics specialisation) Mathematics and Statistics (Statistics specialisation)