505-972 Survival Analysis & Regression for Rates

Credit Points:	12.500
Level:	Graduate/Postgraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 2, - Taught on campus. Classroom
Time Commitment:	Contact Hours: 4 hours/wk over 6 weeks. Total Time Commitment: Students will be expected to undertake additional tasks, reading and preparation equivalent to an average of 80 to 90 hours of additional time commitment.
Prerequisites:	505-969 Epidemiology & Analytic Methods I or equivalent505-970 Epidemiology & Analytic Methods II or equivalent505-971 Linear and Logistic Regression
Corequisites:	Se Prerequisites
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Coordinator:	Centre for MEGA Epidemiology, Pop Hlth
Subject Overview:	This subject expands on Linear and Logistic Regression, introducing the use of rates and rate ratios and the analysis of censored time to event (survival) data. The focus is on methods for modelling the relationship between events measured over time, or censored time-to-event outcomes with a number of covariates, including Poisson regression and survival modelling using the proportional hazards model (Cox regression). Emphasis is on practical application and interpretation of results in the context of standard epidemiological study designs and particularly longitudinal studies. Further topics may include the use of flexible regression models to represent non-linear relationships. Practical work will use the statistical package Stata. **Subject Objectives:** On completion of this subject, students are expected: # To gain an understanding of generalized linear regression modeling of events over time and censored survival time data # To gain familiarity with the topics of model building and prediction in the context of generalized linear models in epidemiology # To develop a basic understanding of the role of regression modeling of rates and epidemiology, particularly in the context of longitudinal studies # To learn practical skills in fitting and interpreting generalized linear regression models for count data over time (Poisson and Cox models) in the statistical computing package Stata # To be introduced to the theory of generalized linear models
Assessment:	One 2,000 word written assignment on modelling rates using Poisson regression due mid-teaching period (30%). One 2,000 word written assignment on modelling time-to-event data using Cox regression due at the end of semester (40%). An end of semester examination (2 hours in length constituting 30% of the total assessment) to be held in the University examination period.

Prescribed Texts:	BR Kirkwood & JAC Sterne, Essential Medical Statistics Second Edition, Blackwell Science, 2003. Special computer skills required: Students are expected to have experience using the Stata statistical package for multivariate analytic methods. Resources provided to distance students (applicable only to distance education subjects)
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	**Subject level:** 500
Links to further information:	http://www.sph.unimelb.edu.au
Notes:	This subject is a group 1 elective in the Master of Public Health. **Subject Coordinator:** Dr Lyle Gurrin 8344 0731
Related Course(s):	Master of Epidemiology Master of Public Health