505-971 Linear & Logistic Regression

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 equivalent
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	Special computer skills required: Students are expected to have experience using the Stata statistical package for basic descriptive statistics
Coordinator:	Centre for MEGA Epidemiology, Pop Hlth
Subject Overview:	This subject covers linear regression methods for continuous outcome variables and logistic regression methods for binary outcome variables. The focus will be on regression methods and models used in epidemiology. The concepts of correlation (for linear regression) and proportions and odds ratios (for logistic regression) will be reviewed. Topics common to both types of regression modelling including model fitting, prediction and how to address confounding and interaction among covariates. Many simpler formula-based techniques for epidemiological analysis will be re-cast within the regression framework. Strategies for analysis including model building, model checking and regression diagnostics will be covered briefly. Extensive case studies and real-world examples will be investigated using the statistical package Stata; a key aim of this subject is to equip students with the practical skills to fit and interpret regression models. **Subject Objectives:** On completion of this subject, students are expected to: # Develop an understanding of the role of linear and logistic regression models in epidemiology, particularly with regard to confounding and interaction, and to relate simpler methods of epidemiological analysis to special cases of regression modelling # Develop practical skills in fitting and interpreting linear and logistic regression models in the statistical computing package Stata # Gain a practical working knowledge of model building, model checking, regression diagnostics and prediction # Understand essential aspects of the theory of linear and logistic regression modelling and their implications for practice.
Assessment:	Two written assignments equivalent to 2000 words, one on each of linear and logistic regression (the first assignment worth 30% will be due mid-teaching period, the second worth 40% a few weeks after the end of teaching) and 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:	Kirkwood, B.R. & Sterne, J., Essential Medical Statistics, 2nd Edition, Blackwell Science, 2003.
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:	On completion of this subject, students are expected to: # Develop applied analytic skills in using regression models in Epidemiology # Have the analytic frameworks to plan and carry out regression analyses on new or existing databases # Have the theoretical understanding and technical skills to read and appraise the research and professional literature in epidemiology and biostatistics where linear and logistic regression analyses have been used # Acquire skills in written communication including the demonstrated ability to present statistical results in a format suitable for publication in health-related journals or professional reports # Have the ability to plan and prioritise subject workload commitments **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 Katrina Scurrah 8344 0746
Related Course(s):	Master of Epidemiology Master of Public Health