

POPH90121 Categorical Data & GLMs

Credit Points:	12.5																		
Level:	9 (Graduate/Postgraduate)																		
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught online/distance.																		
Time Commitment:	Contact Hours: None Total Time Commitment: 170 hours																		
Prerequisites:	505-940 Linear Models (LMR) (may be taken concurrently) <table border="1" data-bbox="389 546 1485 920"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>POPH90016 Epidemiology</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>POPH90015 Mathematics Background for Biostatistics</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>POPH90017 Principles of Statistical Inference</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>POPH90148 Probability and Distribution Theory</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>POPH90120 Linear Models</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	POPH90016 Epidemiology	Semester 1, Semester 2	12.50	POPH90015 Mathematics Background for Biostatistics	Semester 1, Semester 2	12.50	POPH90017 Principles of Statistical Inference	Semester 1, Semester 2	12.50	POPH90148 Probability and Distribution Theory	Semester 1, Semester 2	12.50	POPH90120 Linear Models	Semester 1, Semester 2	12.50
Subject	Study Period Commencement:	Credit Points:																	
POPH90016 Epidemiology	Semester 1, Semester 2	12.50																	
POPH90015 Mathematics Background for Biostatistics	Semester 1, Semester 2	12.50																	
POPH90017 Principles of Statistical Inference	Semester 1, Semester 2	12.50																	
POPH90148 Probability and Distribution Theory	Semester 1, Semester 2	12.50																	
POPH90120 Linear Models	Semester 1, Semester 2	12.50																	
Corequisites:	None																		
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 Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website.																		
Coordinator:	Prof John Carlin																		
Contact:	<p>john.carlin@unimelb.edu.au (mailto:john.carlin@unimelb.edu.au)</p> <p>OR</p> <p>Academic Programs Office Melbourne School of Population and Global Health Tel: +61 3 8344 9339 Fax: +61 3 8344 0824 Email: sph-gradinfo@unimelb.edu.au (mailto:sph-gradinfo@unimelb.edu.au)</p> <p>OR</p> <p>Biostatistics Collaboration of Australia Email: bca@ctc.usyd.edu.au (mailto:bca@ctc.usyd.edu.au) Website: www.bca.edu.au (http://www.bca.edu.au)</p>																		
Subject Overview:	Introduction to and revision of conventional methods for contingency tables especially in epidemiology: odds ratios and relative risks, chi-squared tests for independence, Mantel-Haenszel methods for stratified tables, and methods for paired data. The exponential family of distributions; generalized linear models (GLMs), and parameter estimation for GLMs. Inference for GLMs – including the use of score, Wald and deviance statistics for confidence intervals																		

	and hypothesis tests, and residuals. Binary variables and logistic regression models – including methods for assessing model adequacy. Nominal and ordinal logistic regression for categorical response variables with more than two categories. Count data, Poisson regression and log-linear models.
Learning Outcomes:	To enable students to use generalised linear models (GLMs) and other methods to analyse categorical data with proper attention to the underlying assumptions. There is an emphasis on the practical interpretation and communication of results to colleagues and clients who may not be statisticians.
Assessment:	Two written assignments due before the end of semester worth 35% each (approx 8 hours work each). One written assignment due before the end of semester worth 30% (approx 7 hrs work each)
Prescribed Texts:	None Special Computer Requirements: Stata statistical software Resources Provided to Students: Printed course notes and assignment material will be provided to students by mail (including electronic media).
Recommended Texts:	None
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:	Independent problem solving, facility with abstract reasoning, clarity of written expression, sound communication of technical concepts.
Links to further information:	http://www.sph.unimelb.edu.au
Notes:	This subject is not available in the Master of Public Health.
Related Course(s):	Master of Biostatistics Postgraduate Certificate in Biostatistics Postgraduate Diploma in Biostatistics