

# POPH90121 Categorical Data & GLMs

<b>Credit Points:</b>	12.5																		
<b>Level:</b>	9 (Graduate/Postgraduate)																		
<b>Dates &amp; Locations:</b>	2016, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught online/distance. This subject is only available to students who are currently enrolled in the Graduate Diploma or Master of Biostatistics and whose enrolment in that course commenced prior to 2016.																		
<b>Time Commitment:</b>	Contact Hours: None Total Time Commitment: 170 hours																		
<b>Prerequisites:</b>	505-940 Linear Models (LMR) (may be taken concurrently) <table border="1" data-bbox="386 600 1484 976"> <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
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<b>Corequisites:</b>	None																		
<b>Recommended Background Knowledge:</b>	None																		
<b>Non Allowed Subjects:</b>	None																		
<b>Core Participation Requirements:</b>	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.																		
<b>Coordinator:</b>	Prof John Carlin																		
<b>Contact:</b>	<b><a href="mailto:john.carlin@unimelb.edu.au">john.carlin@unimelb.edu.au</a> (mailto:john.carlin@unimelb.edu.au)</b> <b>Melbourne School of Population and Global Health</b> <b>OR</b> <b>Currently enrolled students:</b> # General information: <a href="https://ask.unimelb.edu.au">https://ask.unimelb.edu.au</a> ( <a href="https://ask.unimelb.edu.au">https://ask.unimelb.edu.au</a> ) # Email: <a href="mailto:enquiries-STEM@unimelb.edu.au">enquiries-STEM@unimelb.edu.au</a> (mailto:enquiries-STEM@unimelb.edu.au) <b>Future Students:</b> # Further Information: <a href="http://mspgh.unimelb.edu.au/">http://mspgh.unimelb.edu.au/</a> ( <a href="http://mspgh.unimelb.edu.au/">http://mspgh.unimelb.edu.au/</a> ) # Email: <b>Online Form</b> ( <a href="http://mspgh.unimelb.edu.au/study/degrees/master-of-public-health/overview">http://mspgh.unimelb.edu.au/study/degrees/master-of-public-health/overview</a> )																		
<b>Subject Overview:</b>	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.
<b>Learning Outcomes:</b>	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.
<b>Assessment:</b>	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)
<b>Prescribed Texts:</b>	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).
<b>Recommended Texts:</b>	None
<b>Breadth Options:</b>	This subject is not available as a breadth subject.
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	Independent problem solving, facility with abstract reasoning, clarity of written expression, sound communication of technical concepts.
<b>Links to further information:</b>	<a href="http://www.mspgh.unimelb.edu.au">http://www.mspgh.unimelb.edu.au</a>
<b>Notes:</b>	This subject is not available in the Master of Public Health.
<b>Related Course(s):</b>	Graduate Certificate in Biostatistics Postgraduate Diploma in Biostatistics