

POPH90123 Longitudinal and Correlated Data

Credit Points:	12.5																					
Level:	9 (Graduate/Postgraduate)																					
Dates & Locations:	2015, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught online/distance.																					
Time Commitment:	Contact Hours: None Total Time Commitment: 170 hours																					
Prerequisites:	- <table border="1"> <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>POPH90120 Linear Models</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>POPH90121 Categorical Data & GLMs</td> <td>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> </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	POPH90120 Linear Models	Semester 1, Semester 2	12.50	POPH90121 Categorical Data & GLMs	Semester 2	12.50	POPH90148 Probability and Distribution Theory	Semester 1, Semester 2	12.50
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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:	john.carlin@unimelb.edu.au (mailto:john.carlin@unimelb.edu.au) OR 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) OR 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)																					
Subject Overview:	Topics covered: Paired data; the effect of non-independence on comparisons within and between clusters of observations; methods for continuous outcomes: normal mixed effects (hierarchical or multilevel) models and generalised estimating equations (GEE); role and																					

	limitations of repeated measures ANOVA; methods for discrete data: GEE and generalized linear mixed models (GLMM); methods for count data.
Learning Outcomes:	To enable students to apply appropriate methods to the analysis of data arising from longitudinal (repeated measures) epidemiological or clinical studies, and from studies with other forms of clustering (cluster sample surveys, cluster randomised trials, family studies) that will produce non-exchangeable outcomes.
Assessment:	Two major assignments due in week 7 and end of semester (30% each) Five short assignments (approx 3 hours of work each) due throughout the semester (8% each)
Prescribed Texts:	None Recommended Text:Fitzmaurice G, Laird N, Ware J. Applied Longitudinal Analysis. John Wiley and Sons, 2004. (ISBN 978-0-471-21487-8) Resources Provided to Students: Printed course notes and assignment material by mail, email, and online interaction facilities. Special Computer Requirements: Stata and SAS statistical software
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:	<ul style="list-style-type: none"> # 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