

## POP90123 Longitudinal and Correlated Data

<b>Credit Points:</b>	12.50																					
<b>Level:</b>	9 (Graduate/Postgraduate)																					
<b>Dates &amp; Locations:</b>	2012, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught online/distance. Distance																					
<b>Time Commitment:</b>	Contact Hours: None Total Time Commitment: 8-12 hours total study time per week																					
<b>Prerequisites:</b>	- <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>POP90016 Epidemiology</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>POP90015 Mathematics Background for Biostatistics</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>POP90017 Principles of Statistical Inference</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> <tr> <td>POP90120 Linear Models</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>POP90121 Categorical Data &amp; GLMs</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>POP90148 Probability and Distribution Theory</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	POP90016 Epidemiology	Semester 1, Semester 2	12.50	POP90015 Mathematics Background for Biostatistics	Semester 1, Semester 2	12.50	POP90017 Principles of Statistical Inference	Semester 1, Semester 2	12.50	POP90120 Linear Models	Semester 2	12.50	POP90121 Categorical Data & GLMs	Semester 2	12.50	POP90148 Probability and Distribution Theory	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>	Professor Andrew Forbes, Monash University Professor John Carlin, Melbourne School of Population Health, University of Melbourne Biostatistics Collaboration of Australia Email: <a href="mailto:bca@ctc.usyd.edu.au">bca@ctc.usyd.edu.au</a> Website: <a href="http://www.bca.edu.au">www.bca.edu.au</a>  OR Academic Programs Office Melbourne School of Population Health Tel: +61 3 8344 9339 Fax: +61 3 8344 0824 Email: <a href="mailto:sph-gradinfo@unimelb.edu.au">sph-gradinfo@unimelb.edu.au</a>																					
<b>Subject Overview:</b>	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.																					

<b>Objectives:</b>	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.
<b>Assessment:</b>	Two written assignments to be submitted during semester worth 40% each (approx 12 hours work each) Four practical exercises due throughout the semester worth 5% each (approx 6 hrs work each)
<b>Prescribed Texts:</b>	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
<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>	<ul style="list-style-type: none"> <li># Independent problem solving;</li> <li># facility with abstract reasoning;</li> <li># clarity of written expression;</li> <li># sound communication of technical concepts.</li> </ul>
<b>Links to further information:</b>	<a href="http://www.sph.unimelb.edu.au">http://www.sph.unimelb.edu.au</a>
<b>Notes:</b>	This subject is not available in the Master of Public Health.
<b>Related Course(s):</b>	Master of Biostatistics Postgraduate Certificate in Biostatistics Postgraduate Diploma in Biostatistics