

505-943 Longitudinal and Correlated Data

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	Distance
Time Commitment:	Contact Hours: None Total Time Commitment: 8-12 hours total study time per week
Prerequisites:	505-106 Epidemiology (EPI) 505-105 Mathematics Background for Biostatistics (MMB) 505-107 Principles of Statistical Inference (PSI) 505-940 Linear Models (LMR) 505-941 Categorical Data and GLMs (CDA) 505-975 Probability and Distribution Theory (PDT)
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	<p><p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.</p> <p>It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability</p></p>
Contact:	Professor Andrew Forbes, Monash University Professor John Carlin, School of Population Health, University of Melbourne Biostatistics Collaboration of Australia School of Population Health, University of Melbourne
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.
Objectives:	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 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)
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
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