POPH90017 Principles of Statistical Inference

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught online/distance. Semester 2, Parkville - Taught online/distance. Distance
Time Commitment:	Contact Hours: None Total Time Commitment: 8-12 hours total study time per week
Prerequisites:	505-105 Mathematics Background for Biostatistics (MBB) 505-975 Probability and Distribution Theory (PDT)
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	None
Coordinator:	Prof John Carlin
Contact:	Semester 1: Ms Rachel O'Connell & Ms Liz Barnes, University of Sydney Semester 2: Dr Patrick Kelly, University of Sydney Biostatistics Collaboration of Australia OR Academic Programs Office Melbourne School of Population Health Tel: +61 3 8344 9339 Fax: +61 3 8344 0824 Email: sph-gradinfo@unimelb.edu.au
Subject Overview:	Review of the key concepts of estimation, and construction of Normal-theory confidence intervals; frequentist theory of estimation including hypothesis tests; methods of inference based on likelihood theory, including use of Fisher and observed information and likelihood ratio; Wald and score tests; an introduction to the Bayesian approach to inference; an introduction to distribution-free statistical methods.
Objectives:	To provide a strong mathematical and conceptual foundation in the methods of statistical inference, with an emphasis on practical aspects of the interpretation and communication of statistically based conclusions in health research.
Assessment:	Two written assignments to be submitted during semester worth 35% each (approx 10 hrs work each). Submission of selected practical exercises throughout the semester worth 10% each (approx 6 hrs work each).
Prescribed Texts:	Printed course notes and assignment material by mail, email, and online interaction facilities. Special Computer Requirements: SAS or Stata Statistical Software
Recommended Texts:	Azzalini, A. *Statistical Inference: Based on the Likelihood*. Chapman and Hall, London, 1996 Clayton and Hills. *Statistical Models in Epidemiology*. Oxford University Press, Oxford, 1993.
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