POPH90017 Principles of Statistical Inference

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. Semester 2, Parkville - Taught online/distance.
Time Commitment:	Contact Hours: None Total Time Commitment: 170 hours
Prerequisites:	The following are pre-requisites for this subject:

Subject	Study Period Commencement:	Credit Points:
POPH90015 Mathematics Background for Biostatistics	Semester 1, Semester 2	12.50
POPH90148 Probability and Distribution Theory	Semester 1, Semester 2	12.50

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.
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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.

Learning Outcomes:	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