

505-107 Principles of Statistical Inference

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:	505-105 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:	<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:	<p>Semester 1: Ms Adrienne Kirby, University of Sydney</p> <p>Semester 2: Dr Patrick Kelly, University of Sydney</p> <p>Biostatistics Collaboration of Australia</p> <p>School of Population Health, University of Melbourne</p>
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. <i>Statistical Inference: Based on the Likelihood</i> . Chapman and Hall, London, 1996 Clayton and Hills. <i>Statistical Models in Epidemiology</i> . 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