

# POPH90017 Principles of Statistical Inference

<b>Credit Points:</b>	12.50											
<b>Level:</b>	9 (Graduate/Postgraduate)											
<b>Dates &amp; Locations:</b>	2013, 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>	The following are pre-requisites for this subject:											
	<table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>POPH90015 Mathematics Background for Biostatistics</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>POPH90148 Probability and Distribution Theory</td> <td>Not offered 2013</td> <td>12.50</td> </tr> </tbody> </table>			Subject	Study Period Commencement:	Credit Points:	POPH90015 Mathematics Background for Biostatistics	Semester 2	12.50	POPH90148 Probability and Distribution Theory	Not offered 2013	12.50
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POPH90015 Mathematics Background for Biostatistics	Semester 2	12.50										
POPH90148 Probability and Distribution Theory	Not offered 2013	12.50										
<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>	Semester 1: Dr Rachel O'Connell & Ms Liz Barnes, University of Sydney Semester 2: Dr Patrick Kelly, University of Sydney 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>	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.											
<b>Objectives:</b>	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.											
<b>Assessment:</b>	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).											

<b>Prescribed Texts:</b>	Printed course notes and assignment material by mail, email, and online interaction facilities. Special Computer Requirements: SAS or Stata Statistical Software
<b>Recommended Texts:</b>	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.
<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>	Independent problem solving, facility with abstract reasoning, clarity of written expression, sound communication of technical concepts.
<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