

# MAST90100 Inference Methods in Biostatistics

<b>Credit Points:</b>	12.5						
<b>Level:</b>	9 (Graduate/Postgraduate)						
<b>Dates &amp; Locations:</b>	2016, Parkville This subject commences in the following study period/s: April, Parkville - Taught on campus.						
<b>Time Commitment:</b>	Contact Hours: 24 hours Total Time Commitment: 170 hours						
<b>Prerequisites:</b>	The following subject may be taken concurrently <table border="1" data-bbox="387 544 1485 689"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>POPH90148 Probability and Distribution Theory</td> <td>Semester 1, Semester 2</td> <td>12.5</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	POPH90148 Probability and Distribution Theory	Semester 1, Semester 2	12.5
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POPH90148 Probability and Distribution Theory	Semester 1, Semester 2	12.5					
<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>	<p><b><a href="mailto:john.carlin@unimelb.edu.au">john.carlin@unimelb.edu.au</a> (mailto:john.carlin@unimelb.edu.au)</b></p> <p><b>Melbourne School of Population and Global Health</b></p> <p><b>OR</b></p> <p><b>Currently enrolled students:</b></p> <p># General information: <b><a href="https://ask.unimelb.edu.au">https://ask.unimelb.edu.au</a> (https://ask.unimelb.edu.au)</b></p> <p># Email: <b><a href="mailto:enquiries-STEM@unimelb.edu.au">enquiries-STEM@unimelb.edu.au</a> (mailto:enquiries-STEM@unimelb.edu.au)</b></p> <p><b>Future Students:</b></p> <p># Further Information: <b><a href="http://mspgh.unimelb.edu.au/">http://mspgh.unimelb.edu.au/</a> (http://mspgh.unimelb.edu.au/)</b></p> <p># Email: <b><a href="http://mspgh.unimelb.edu.au/study/degrees/master-of-public-health/overview">Online Form</a> (http://mspgh.unimelb.edu.au/study/degrees/master-of-public-health/overview)</b></p>						
<b>Subject Overview:</b>	This subject provides the foundation theory and methods needed for biostatisticians to apply and critically interpret statistical inference, the science of drawing conclusions from data that are subject to variability. Major topics include review of the key concepts of estimation including sampling variability and construction of confidence intervals; null hypothesis testing; methods of inference based on likelihood theory (Fisher and observed information, likelihood ratio, Wald and score tests); and an introduction to the Bayesian approach to inference. The approach will emphasise a critical understand- <u>ing</u> of the role of statistical inference in health research.						
<b>Learning Outcomes:</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>	Practical exercise 1 (approx 4 hours of work, approx 600 words, no more than 4 pages) due in Week 6 (10%) Practical exercise 2 (approx 4 hours of work, approx 600 words, no more than 4 pages) due in Week 7 (10%) Major assignment 1 (approx 10 hours of work, approx 1900 words, no more than 10 pages) due in Week 9 (30%) Practical exercise 3 (approx 4 hours of work, approx 600 words, no more than 4 pages) due in Week 11 (10%) Major assignment 2 (approx 12 hours of work, approx 2300 words, no more than 12 pages) due in Week 12 (40%)
<b>Prescribed Texts:</b>	Marschner IC. Inference Principles for Biostatisticians. CRC Press, 2015.Special Computer Requirements: Stata Statistical Software
<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>	<ul style="list-style-type: none"> <li># Independent problem solving,</li> <li># Facility with abstract reasoning,</li> <li># Clarity of written expression,</li> <li># Sound communication of technical concepts</li> </ul>
<b>Related Course(s):</b>	Graduate Diploma in Biostatistics Master of Biostatistics