BIOL90002 Biometry

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: June, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 48 hours over eight days, comprising twenty-four 1-hour lectures and eight 3-hour tutorials. Total Time Commitment: Not available
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	Basic understanding of statistical inference, obtained by completion of appropriate undergraduate or postgraduate subjects, or completion of preparatory multimedia material and reading.
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 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. 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
Coordinator:	Dr Jan Carey, Prof Michael Keough
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Subject Overview:	Biological knowledge is increased by an iterative process of developing ideas, collecting data to assess those ideas, analysing and interpreting those data, and communicating the conclusions. Those conclusions are used to develop new research ideas, improve human health, and to make decisions about environmental management. For this process to be successful, we must collect the right data, enough data, and we must analyse and interpret those data correctly. Biologists must also be able to interpret colleagues' analyses and interpretation critically. This subject provides recommendations on appropriate was of collecting data, introduces the most common statistical tools applied to biological (including biomedical and environmental) data, and discusses ways of interpreting and presenting the results of analyses. Topics covered include strategies for efficient and effective estimation, the design of routine monitoring and assessment programs, and experimental design. It will also cover the most common statistical methods used for biological data, including general linear models, logistic and log-linear models, and multivariate techniques, and emphasis will be placed on interpretation and reporting of data analyses.
Learning Outcomes:	The objectives of this subject are to provide students with: # familiarity with the kinds of data generated by biological and environmental research programs; # the skills to design efficient sampling programs and experiments in biological science ;

	# an awareness of biological issues that may cause statistical complications; # an understanding of the statistical models that are applied to different kinds of biological data; # be able to present and interpret results of analyses.
Assessment:	Two reports, of similar weighting and totalling less than 3,000 words, one due early in the assessment period and the other toward the end of the assessment period (30%); a 2-hour examination at the end of the assessment period (70%).
Prescribed Texts:	Quinn, G.P. & M.J. Keough (2002) Experimental design and data analysis for biologists. Cambridge University Press
Recommended Texts:	McCarthy, M.A. (2007) Bayesian methods for ecology. Cambridge University Press
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:	At the completion of this subject, students should gain skills in: # handling, managing and interpreting quantitative data; # communicating quantitative results to a general audience; # developing the ability to exercise critical judgement; # rigorous and independent thinking; # time management and self-management.
Notes:	Students undertaking this subject will be expected to regularly access a computer with statistical software.
Related Course(s):	Master of Science (BioSciences) Master of Science (Ecosystem Science) Master of Science (Zoology)
Related Majors/Minors/ Specialisations:	Bachelor of Environments (Honours) Environmental Geography Bachelor of Environments (Honours) Landscape Management Botany Botany Conservation and Restoration Conservation and Restoration Geography Honours Program - BioSciences Honours Program - Botany Honours Program - Forest Science Honours Program - Geography Honours Program - Zoology Sustainable Forests Sustainable Forests Tailored Specialisation Tailored Specialisation