

MAST40001 Research Philosophies and Statistics

Credit Points:	12.50
Level:	4 (Undergraduate)
Dates & Locations:	2012, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: Twenty-four hours lectures, 24 hours tutorials Total Time Commitment: Not available
Prerequisites:	Eligibility for honours or postgraduate degree; 202-202 Experimental Design and Statistical Analysis or equivalent.
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: http://www.services.unimelb.edu.au/disability/
Coordinator:	Dr Peter Ades
Contact:	Melbourne School of Land & Environment Student Centre Ground Floor, Land & Food Resources (building 142) <i>Enquiries</i> Phone: 13 MELB (13 6352) Email: 13MELB@unimelb.edu.au (mailto:13MELB@unimelb.edu.au)
Subject Overview:	<p>This subject should give students knowledge of a range of research methodologies and underlying philosophies, and sophisticated statistical tools to design laboratory and field experiments and field surveys, and effectively and appropriately analyse these data sets in agriculture, horticulture and land management.</p> <p>Upon completion of the subject, students should be able to:</p> <ul style="list-style-type: none"> # formulate research questions and hypotheses, and implement hypotheses testing, to satisfy research needs in different disciplines, including field research and economics; # recognise, understand and apply concepts of study design (such as observational studies versus designed experiments, confounding, replication, randomisation, and blocking), and discuss the effect of design concepts on the interpretation of results; # determine the appropriate statistical methodology to use, including parametric and non-parametric methods, and confirm that data sets meet the underlying assumptions of the statistical model chosen; # display an understanding of the purpose and limitation of inference, and be able to use the main tools of inference to analyse and interpret data; and # interpret statistical program outputs in agricultural, horticultural and land management contexts

Objectives:	The objectives of this subject are to provide students with: <ul style="list-style-type: none"> # a basic understanding of how to ask and answer questions in experimental biology; # familiarity with the kinds of data generated in biological and environmental research; # skills to design efficient sampling programs and experiments in biological science; # an understanding of the statistical models and analyses that can be applied to different kinds of biological data; # be able to interpret and present results of statistical analyses.
Assessment:	A 2-hour examination (50%), one intergrated assignment of up to 3,000 words or equivalent (50%).
Prescribed Texts:	None
Recommended Texts:	# Biostatistical Analysis (JH Zar), 5th edn, 2008 (4th Edition is also adequate)
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:	On completion of this subject, students should have developed the following generic skills: <ul style="list-style-type: none"> # academic excellence; # greater in-depth understanding of scientific disciplines of animal nutrition. # The study will develop critical thinking and analysis; and problem solving. # Flexibility and level of transferable skills should be enhanced though improved ability to communicate ideas effectively in both written and verbal formats.
Related Course(s):	Bachelor of Agricultural Science (Honours) Bachelor of Agriculture (Honours) Bachelor of Animal Science and Management with Honours Bachelor of Food Science (Honours) Bachelor of Forest Science (Honours) Bachelor of Horticulture (Honours) Bachelor of Natural Resource Management with Honours Postgraduate Diploma in Food Science
Related Majors/Minors/Specialisations:	Bachelor of Environments (Honours) Environmental Geographies, Politics and Cultures Bachelor of Environments (Honours) Landscape Management Conservation, Restoration and Landscape Management Environmental Studies Geography Geography Honours Program - Agricultural Science Honours Program - Animal Science and Management Honours Program - Food Science Honours Program - Forest Science Honours Program - Geography Honours Program - Veterinary Bioscience