MAST90044 Thinking and Reasoning with Data

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2012, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 48 hours comprising two 1-hour lectures per week and one 2-hour computer laboratory session per week. Total Time Commitment: Not available
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	It is expected that students have previously attended an introductory statistics subject or be otherwise familiar with elementary statistics.
Non Allowed Subjects:	None
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact upon their active and safe participation in a subject are encouraged to discuss this with the relevant subject coordinator and the Disability Liaison Unit.
Coordinator:	Assoc Prof Ray Watson
Contact:	**Email: raymondw@unimelb.edu.au (mailto:raymondw@unimelb.edu.au)**
Subject Overview:	What conclusion can be drawn from a pool of data? How can a scientist draw meaningful conclusions while not overreaching? How can modelling help the scientist interpret data? This subject will address these questions by teaching students critical thinking and data analysis skills. After completing this subject students will understand the basic principles of sampling and experimental design, how the results of statistical analyses are reported, the statistical thinking behind common statistical procedures and will be able to carry out a range of standard statistical techniques.
Objectives:	After completing this subject students should understand: # the principles of sampling and experimental design; # how the results of statistical analyses are reported; # the statistical thinking behind common statistical procedures and be able to carry out many standard statistical techniques.
Assessment:	Up to 30 pages of written assignments (50%: three assignments worth 15%, 15% and 20% due early, mid and late in semester), a 2-hour written examination (50%, in the examination period).
Prescribed Texts:	To be advised.
Recommended Texts:	To be advised.
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 the following generic skills: # problem-solving skills (especially through tutorial exercises and assignments) including engaging with unfamiliar problems and identifying relevant strategies; # analytical skills including the ability to construct and express logical arguments and to work in abstract or general terms to increase the clarity and efficiency of the analysis; # the ability to work in a team, through interactions with other students.
Related Course(s):	Master of Biotechnology Master of Science (Biomedical and Health Sciences) Master of Science (Botany) Master of Science (Computer Science) Master of Science (Earth Sciences) Master of Science (Geography) Master of Science (Information Systems) Master of Science (Physics) Master of Science (Vision Science) Master of Science (Zoology)
Related Majors/Minors/ Specialisations:	Environmental Science Environmental Science