521-225 Integrated Biomedical Science

Credit Points:	25.000
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: Six hours of lectures and three hours of practical or self-directed computer-based learning exercises per week Total Time Commitment: Not available
Prerequisites:	650-131 and 650-132; or 600-131 and 600-132 prior to 2004
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 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:	A/Prof T Lithgow; Dr T Mulhern
Subject Overview:	This multidisciplinary subject blends biochemistry, molecular and cell biology, tissue biology and physiology, to develop knowledge of the relationship between the structure and function of the major classes of biomolecules, higher ordered structures and cells, as well as the contribution these molecules make to cellular, tissue and whole systems biology. The biochemistry component (36 lectures) covers structure and function of proteins, biological membranes and nucleic acids; and an introduction to recombinant DNA technology, including genome analysis, proteomics and bioinformatics. The cell biology stream (24 lectures) includes the histology and ultrastructure of cells and basic tissue types, epithelium, muscle, nerve, haemopoietic and connective tissues; and the organisation of the major organs and the structure and function of cellular organelles, cytoskeletal structures and the extracellular matrix. The introductory physiology stream (12 lectures) will concentrate on mammalian (especially human) physiology: homeostasis, the relationship between organs and organ systems, cell physiology, excitable cells and electrolyte transport. Practical work will develop basic experimental, data analysis and interpretation skills in biochemistry, physiology and cell and tissue biology techniques. In addition to the specific skills gained, students will think critically and organise knowledge from diverse resources, expand from theoretical principles to practical explanations and acquire abilities in collaborative work.
Assessment:	Two 2-hour end-of-semester examinations on the theory and practical work (70%); laboratory practical work (15%); short (1500-word) written assignment (10%); multiple-choice tests (5%).
Prescribed Texts:	None
Recommended Texts:	Information Not Available
Breadth Options:	This subject is a level 2 or level 3 subject and is not available to new generation degree students as a breadth option in 2008. This subject or an equivalent will be available as breadth in the future.

	Breadth subjects are currently being developed and these existing subject details can be used as guide to the type of options that might be available. 2009 subjects to be offered as breadth will be finalised before re-enrolment for 2009 starts in early October.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	Information Not Available
Notes:	This subject is only available to Bachelor of Biomedical Engineering students
Related Course(s):	Bachelor of Engineering (Biomedical) Biomechanics Bachelor of Engineering (Biomedical)Biocellular Bachelor of Engineering (Biomedical)Bioinformatics Bachelor of Engineering (Biomedical)Biosignals