

521-302 Functional Genomics

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: 36 lectures (three per week) Total Time Commitment: 120 hours
Prerequisites:	Biochemistry 521-211, 521-212 and 521-220. Other combinations that provide similar background will be considered by the coordinator. BBiomedSc students: 521-213 and 536-250.
Corequisites:	None
Recommended Background Knowledge:	None
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:	A/Prof I R van Driel
Subject Overview:	<p>By the end of the subject, the student should have developed a detailed understanding of current concepts concerning the molecular bases of genome structure and the regulation of gene expression in eukaryotic organisms (yeast, animals and plants); a theoretical background to recombinant DNA technology and an appreciation of its biomedical and biotechnological applications; an appreciation of the significance and applications of human and related genome sequencing programs; and the ability to read critically original scientific literature in the field. Subject content includes structure of genes and chromosomes; identification and functional characterisation of candidate genes for human familial disease; molecular aspects of transcription and RNA maturation; regulation of gene expression at the transcriptional and translational levels; gene expression profiling and proteomics; biochemistry and molecular biology of cell cycle control and carcinogenesis; proto-oncogenes and tumour suppressor genes; ribozymes and the catalytic and antisense functions of RNA; applied genomics; and recombinant DNA technology, including recombinant protein expression systems with particular reference to investigations based on transfected cell culture, transgenic and gene knockout systems.</p> <p>In addition to these specific skills, students will think critically from consideration of the lecture material and research papers, expand from theoretical principles to practical explanations through observing and reporting research literature, and acquire abilities in collaborative working while participating in group presentations.</p>
Assessment:	A 15-minute group oral presentation or a 1500 word written assignment during the semester (10%); two 45-minute multiple choice examinations during the semester (5% each); a 3-hour written examination in the examination period (80%).
Prescribed Texts:	Molecular Biology of the Cell (B Alberts et al), 4th edn, Garland, 2001 Molecular Cell Biology (H Lodish et al), 5th edn, Freeman, 2004
Breadth Options:	<p>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.</p> <p>This subject or an equivalent will be available as breadth in the future.</p> <p>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.</p> <p>2009 subjects to be offered as breadth will be finalised before re-enrolment for 2009 starts in early October.</p>

Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Notes:	Students enrolled in the BSc (pre-2008 BSc), BASc or a combined BSc course will receive science credit for the completion of this subject.
Related Course(s):	Bachelor of Arts and Bachelor of Science Bachelor of Arts and Sciences Bachelor of Biomedical Science Bachelor of Science Graduate Diploma in Biotechnology