433-450 Computational Gene Expression

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: 24 hours of lectures and 12 hours of labs Total Time Commitment: Not available
Prerequisites:	Three semesters of programming experience 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 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 L Stern
Subject Overview:	The objective of this subject is for students to become familar with a range of algorithms used to process biological sequences: to know a variety of techniques for extracting information from biological sequences; and to understand the appropriate application of these algorithms for different applications. Topics covered include dynamic programming algorithms; genetic algorithms; multiple sequence alignment algorithms; hidden Markov models; sequence comparison; RNA secondary structure, motif extraction; determination of protein structure software for computational biology.
Assessment:	One 3-hour examination (70%) and assignments of up to 2,500 words equivalent (30%). Both the project work and examination component of assessment must be completed satisfactorily to pass the subject.
Prescribed Texts:	Non contact time commitment 84 hours
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 successful completion, students should be able to: # Implement the basic algorithms used in processing biological sequences; # Select appropriate algorithms to process biological sequences; # Use and critically evaluate the output from software used for processing biological sequences; # Be able to work on a team project.
Related Course(s):	Bachelor of Engineering (Biomedical)Bioinformatics