

786-AB Graduate Diploma in Biotechnology

Year and Campus:	2009								
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees								
Level:	Graduate/Postgraduate								
Duration & Credit Points:									
Contact:	Course Coordinator: Dr David Tribe detribe@unimelb.edu.au								
Course Overview:	<p>Biotechnology is the application of molecular, genetic and cellular techniques from the life sciences for practical contribution to human welfare, often applied in a commercial setting. It includes both medical areas such as vaccine and drug development, industrial activities such as hormone manufacturing using large scale cell culture or drug synthesis using enzyme catalysis, and non-medical applications such as waste treatment and biofuel production.</p> <p>The Graduate Diploma in Biotechnology offers a flexible path of personal and professional development that suited for entry into a wide range of biotechnology industries and research enterprises.</p>								
Objectives:	<p>The framework of the Graduate Diploma in Biotechnology is designed to allow students of diverse backgrounds great flexibility of subject choice according to their area of particular interest. It provides students with an opportunity to catch up on the introductory aspects of certain subjects, and permits specialisation in advanced subjects. There is an opportunity to obtain significant experimental experience during the research project which is part of the diploma training.</p> <p>The course is designed to:</p> <ul style="list-style-type: none"> # foster acquisition of a broad range of up to date knowledge appropriate for employment in the biotechnology sector # develop research, analytical, and communication skills # provide significant research experience through 'on the job' training ; # provide skills in advanced techniques through using state of the art equipment; # develop leadership for the science-biotechnology base of industry, economy and human welfare. 								
Course Structure & Available Subjects:	<p>Completion of 100 points from a selection of approved subjects offered in the disciplines of Anatomy and Cell Biology, Biochemistry, Botany, Chemical Engineering, Chemistry, Genetics, History and Philosophy of Science, Medical Biology, Microbiology, Pathology, Pharmacology and Physiology.</p> <p>All students are required to do 510-801 Major Project in Biotechnology (25 points).</p> <p>A minimum of 37.5 points from Group A subjects (see list below).</p> <p>The remaining 37.5 points may be from Group A, Group B, Group C or non-group subjects (eg offered by Engineering, Agriculture and Forestry, Arts, Law and Social Science as approved by the course coordinator), with no more than 12.5 points from Group B.</p> <p><i>Quota:</i></p> <p>Some of the subjects offered in this course are quota subjects. The selection of students in quota-restricted subjects is based primarily on tertiary results.</p>								
Subject Options:	<p>Core Subject:</p> <p>Core Subject</p> <p>Core Subject:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Subject</th> <th style="width: 20%;">Study Period Commencement:</th> <th style="width: 20%;">Credit Points:</th> </tr> </thead> <tbody> <tr> <td>510-801 Major Project in Biotechnology</td> <td>Summer, Semester 1, Semester 2</td> <td>25.000</td> </tr> </tbody> </table> <p>Group A Subjects (At least 37.5 points of the course must be taken from this group):</p>			Subject	Study Period Commencement:	Credit Points:	510-801 Major Project in Biotechnology	Summer, Semester 1, Semester 2	25.000
Subject	Study Period Commencement:	Credit Points:							
510-801 Major Project in Biotechnology	Summer, Semester 1, Semester 2	25.000							

Group A Subjects

Group A Subjects:

Subject	Study Period Commencement:	Credit Points:
411-335 Biochemical/Environmental Engineering 1B	Not offered 2009	6.250
411-448 Biochemical/Environmental Engineering 2	Semester 2	12.500
521-301 Protein Structure and Function	Semester 2	12.500
521-302 Functional Genomics and Bioinformatics	Semester 1	12.500
521-303 Molecular Aspects of Cell Biology	Semester 1	12.500
526-301 Microbial Cells and Genomes	Semester 2	12.500
526-302 Microbial Biotechnology	Not offered 2009	
610-333 Molecular Technology	Semester 2	12.500
652-302 Genes: Organisation and Function	Semester 1	12.500

Group B Subjects (No more than 12.5 points should be taken from this group):

Group B Subjects:

Group B Subjects:

Subject	Study Period Commencement:	Credit Points:
516-201 Cell Biology: Tissues and Organs	Not offered 2009	12.50
521-211 Biochemistry and Molecular Biology	Semester 1	12.500
521-212 Biochemical Regulation of Cell Function	Semester 2	12.500
521-220 Techniques in Molecular Science	Semester 1, Semester 2	12.500
526-201 Principles of Microbiology & Immunology	Semester 1	12.500
526-205 Microbes: Infections and Responses	Semester 2	12.500
526-221 Experimental Microbiology	Semester 1, Semester 2	12.500
531-201 Basic Principles of Pathology-Science	Semester 2	12.500
534-201 Fundamentals of Pharmacology	Semester 2	12.500
536-201 Principles of Physiology	Not offered 2009	12.50
536-202 Physiology (General Practical)	Not offered 2009	
606-205 Cell Biology: Concepts and Diversity	Not offered 2009	12.50
610-220 Organic Chemistry	Not offered 2009	12.50
610-260 Analysis in Chemical and Life Sciences	Not offered 2009	12.50
652-214 Principles of Genetics	Semester 1	12.500
652-215 Genes and Genomes	Semester 2	12.500
652-216 Experiments in Genetics	Semester 1, Semester 2	12.500

Group C Subjects:

Group C Subjects**Group C Subjects:**

Subject	Study Period Commencement:	Credit Points:
510-802 Biotechnology Research Methods	Semester 1, Semester 2	25.000
516-302 Developmental Biology	Semester 2	12.500
521-304 Cell Signalling and Neurochemistry	Semester 2	12.500
521-305 Biochemistry of Metabolism & Nutrition	Semester 1	12.500
521-307 Biomolecular Structure & Bioinformatics	Not offered 2009	12.50
521-321 Gene Technology & Protein Expression	Not offered 2009	12.50
521-322 Protein Biochemistry and Proteomics	Not offered 2009	12.50
526-304 Principles of Immunology	Semester 1	12.500
526-305 Medical and Applied Immunology	Semester 2	12.500
526-321 Molecular Microbiology Techniques	Semester 1	12.500
526-324 Immunological Techniques	Semester 1	12.500
526-326 Projects: Immunology	Semester 2	12.500
526-327 Projects: Microbiology	Semester 2	12.500
531-301 Cellular Basis of Disease	Semester 1	12.500
531-302 Techniques for Investigation of Disease	Semester 1	12.500
531-303 Molecular/Genetic Basis of Disease-Lect	Semester 2	12.500
534-301 Cellular and Molecular Pharmacology	Semester 1	25.000
534-302 Neuropharmacology	Semester 1	12.500
534-305 Toxicology	Semester 2	12.500
534-306 Drug Discovery	Semester 2	12.500
536-301 Cardiovascular Health: Genes & Hormones	Semester 1	12.500
536-302 Molecular Neurophysiology	Semester 2	12.500
536-311 Molecular/Cellular Basis of Physiology	Semester 2	12.500
606-309 Frontiers of Cell Biology	Semester 1	12.500
610-320 Organic Chemistry IIIA	Semester 2	12.500
652-301 Evolutionary Genetics and Genomics	Semester 1	12.500
652-304 Genetic Analysis	Semester 2	12.500
652-305 Human and Medical Genetics	Semester 2	12.500
652-306 Experimental Genetics	Not offered 2009	12.50

Entry Requirements:

A bachelor degree in science, engineering or other approved qualifications. Preference will be given to candidates with relevant work experience. Candidates are expected to provide evidence that they have already completed at least one university course in Biology and at least one University course in Chemistry.

Core Participation Requirements:	<p><p>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.</p> <p>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</p></p>
Notes:	Students will complete normal end of semester examinations for the subjects in which they have enrolled. Satisfactory completion of subjects worth 75 points, along with satisfactory completion of the 25 point research project, is required to obtain the Graduate Diploma in Biotechnology.