

BCMB20005 Techniques in Molecular Science

Credit Points:	12.50																		
Level:	2 (Undergraduate)																		
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus. Semester 2, Parkville - Taught on campus.																		
Time Commitment:	Contact Hours: 5 hours per week: 1 x lecture, 1 x tutorial, 1 x practical class (3 hours) Total Time Commitment: 60 contact hours per semester with an estimated total time commitment of 120 hours																		
Prerequisites:	<p>For BSc degree One of:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>CHEM10003 Chemistry 1</td> <td>Semester 1, Semester 2</td> <td>12.50</td> </tr> </tbody> </table> <p>OR 610-121 Chemistry A OR 610-141 Chemistry A</p> <p>AND One of:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>CHEM10004 Chemistry 2</td> <td>January, Semester 2</td> <td>12.50</td> </tr> </tbody> </table> <p>OR 610-122 Chemistry B OR 610-142 Chemistry B</p> <p>For BBiomed degree</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>CHEM10006 Chemistry for Biomedicine</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table> <p>Other combinations of subjects that provide a similar background may be considered by the coordinator.</p>	Subject	Study Period Commencement:	Credit Points:	CHEM10003 Chemistry 1	Semester 1, Semester 2	12.50	Subject	Study Period Commencement:	Credit Points:	CHEM10004 Chemistry 2	January, Semester 2	12.50	Subject	Study Period Commencement:	Credit Points:	CHEM10006 Chemistry for Biomedicine	Semester 1	12.50
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Corequisites:	<p>If a BSc student wishes to complete a major in Biochemistry and Molecular Biology, they must complete this subject and Biochemistry and Molecular Biology at Level 2.</p> <p>If a BBiomed student wishes to complete a major in Biochemistry and Molecular Biology, they must also complete Molecular and Cellular Biomedicine. It is strongly recommended that the student completes Biochemical Regulation of Cell Function.</p>																		
Recommended Background Knowledge:	<p>BSc students Level 1 biology is recommended. Biochemistry and Molecular Biology is strongly recommended.</p>																		
Non Allowed Subjects:	<p>Students cannot enrol in and gain credit for this subject if previously obtained credit for pre-2009 subjects Techniques in Protein and Gene Technology (521-220), Integrated Biomedical Science I (521-213), Integrated Biomedical Science (521-225), Integrated Biomedical Science II (536-250) or Integrated Biomedical Science II (536-225).</p>																		
Core Participation Requirements:	<p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on</p>																		

	the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
Coordinator:	Dr Leon Helfenbaum
Contact:	leonh@unimelb.edu.au (mailto:leonh@unimelb.edu.au)
Subject Overview:	<p>This is a subject suitable for students taking life science subjects and combined degrees. It offers and introduction to the techniques used in many areas of molecular science. Students taking the course will develop practical skills in the laboratory and an understanding of the techniques employed in biochemistry and molecular biology to investigate biological problems. This subject is a specific prerequisite for completing a major in Biochemistry and Molecular Biology.</p> <p>Students will develop practical and research skills by learning how the physico-chemical properties of molecules are exploited in a variety of experimental techniques, by executing these techniques and interpreting the data they yield.</p> <p>Students will apply these skills to the:</p> <ul style="list-style-type: none"> # separation and characterisation of proteins; and # isolation, manipulation and characterisation of nucleic acids. <p>Students will report on their practical work and learn to relate theoretical principles to their practical outcomes.</p> <p>The lectures will explain the theory of standard laboratory techniques and the latest methods that are central to progress in biochemistry and molecular biology and which are driving the emerging fields of genomics and proteomics.</p>
Objectives:	<p>This course aims to:</p> <ul style="list-style-type: none"> # Describe and explain the theory behind many techniques used in molecular biology and protein biochemistry. # Provide practical experience in a number of key techniques in molecular biology and protein biochemistry. # Enable students to generate their own experimental results. # Provide students with the means to analyse the data they generate. # Teach students to work accurately and systematically.
Assessment:	Written reports of experiments and related activities due after the completion of each activity (50%); a 50-minute written test held mid semester (5%); a practical class based assessment at the end of the semester (10%); and a 2-hour written examination during the examination period (35%).
Prescribed Texts:	None
Recommended Texts:	Keith Wilson and John Walker, Principles and Techniques of Biochemistry and Molecular Biology, 6th Ed (2005) Cambridge University Press.
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:	<p>By completion of the subject, students should have:</p> <ul style="list-style-type: none"> # Gained hands on experience in a number of simple practical techniques. # Analysed experimental data and made quantitative assessments of their results. # Learnt to write concise and accurate reports. # Gained the ability to understand and follow simple experimental protocols. # Gained experience in working with a partner or a small team towards common goals.

Notes:	<p>This subject is available for science credit to students enrolled in the BSc (both pre-2008 and New Generation degrees), BAsC or a combined BSc course. It is also available to students enrolled in BBiomedicine.</p> <p>Not available to students enrolled in the BBiomedSc.</p> <p>Before the commencement of the semester, students must advise the Department of Biochemistry and Molecular Biology of their order of preference for the alternative practical sessions and the other subjects they will be taking.</p> <p>Students undertaking this subject will be expected to regularly access an internet-enabled computer.</p>
Related Course(s):	Bachelor of Biomedical Science Bachelor of Science Graduate Diploma in Biotechnology
Related Majors/Minors/ Specialisations:	Biochemistry and Molecular Biology Biotechnology Genetics Pathology