BCMB20005 Techniques in Molecular Science

Credit Points:	12.50
Level:	2 (Undergraduate)
Dates & Locations:	This subject is not offered in 2014. An enrolment quota of 210 students per semester (50-52 students per practical class over 4 days per week) applies to this subject. For detailed information on the quota subject application process, refer to the Quota Subject link on the MDHS Student Centre website: http://sc.mdhs.unimelb.edu.au/quota-subjects
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:	For BSc degree One of: **Subject** / **Study Period Commencement:** / **Credit Points:** CHEM10003 Chemistry 1 / Semester 1, Semester 2 / 12.50 OR **610-121 Chemistry** A OR **610-141Chemistry A** AND One of: **Subject** / **Study Period Commencement:** / **Credit Points:** CHEM10004 Chemistry 2 / Summer Term, Semester 2 / 12.50 OR **610-122 Chemistry B** OR **610-142 Chemistry B** For BBiomed degree **Subject** / **Study Period Commencement:** / **Credit Points:** CHEM10006 Chemistry for Biomedicine / Semester 1 / 12.50 Other combinations of subjects that provide a similar background may be considered by the coordinator. Pre-requisites CANNOT be taken concurrently.
Corequisites:	None
Recommended Background Knowledge:	For BSc students Level 1 biology is recommended. **Subject** / **Study Period Commencement:** / **Credit Points:** BCMB20002 Biochemistry and Molecular Biology / Semester 1, Semester 2 / 12.50 is strongly recommended.
Non Allowed Subjects:	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)**.
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
Contact:	Subject Coordinator Dr Amber Willems-Jones **amber.willems@unimelb.edu.au (mailto:amber.willems@unimelb.edu.au)** Administrative Coordinator Ms Irene Koumanelis **i.koumanelis@unimelb.edu.au (mailto:i.koumanelis@unimelb.edu.au)**
Subject Overview:	This is a subject suitable for students taking life science and biomedical subjects. It offers an 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 used in biochemistry and molecular biology to investigate biological problems. Students will develop practical and research skills by exploiting the physico-chemical properties of molecules in a variety of experimental techniques, and interpreting the data they yield. Students will apply these skills to the: • separation and characterisation of proteins; and • isolation, manipulation and characterisation of nucleic acids. Students will report on their practical work and learn to relate principles to practical outcomes. The lectures will cover 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 fields of genomics and proteomics.
Learning Outcomes:	This course aims to: # 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 performance in practical classes (50%); a 40-minute test held mid semester (5%); a practical class based assessment at the end of the semester (10%); a 2-hour written final examination held during the examination period (35%). Students who miss more than 20% of practical classes in this subject will not be eligible for final assessment.
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:	By completion of the subject, students should have: # 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:	This subject is available for science credit to students enrolled in the BSc and BBiomed. This subject is a specific prerequisite for completion of majors in Biochemistry and Molecular Biology, Pathology and the Biotechnology-Biochemistry stream. If a BSc student wishes to complete a major in Biochemistry and Molecular Biology, they must complete this subject and **'Biochemistry and Molecular Biology' (BCMB20002)**'. If a BBiomed student wishes to complete a major in Biochemistry and Molecular Biology, they must also complete **'Molecular and Cellular Biomedicine' (BIOM20001)**. It is strongly recommended that the student completes **'Biochemical Regulation of Cell Function' (BCMB20003)**. Students must enrol for one of the available laboratory days via the student portal before the start of the semester. Be aware that each day has limited places and in general allocations to practical classes will be made on a first come-first served basis. Students undertaking this subject will be expected to have regular access to an internet-enabled computer.
Related Majors/Minors/ Specialisations:	Science credit subjects* for pre-2008 BSc, BASc and combined degree science courses Science-credited subjects - new generation B-SCI and B-ENG. Selective subjects for B-BMED