

BCMB30003 Molecular Aspects of Cell Biology

Credit Points:	12.50														
Level:	3 (Undergraduate)														
Dates & Locations:	2011, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.														
Time Commitment:	Contact Hours: three x 1 hour lecture, and one x 1 hour tutorial per week. Total Time Commitment: 120 hours.														
Prerequisites:	<p>BSc students Before 2009: Biochemistry & Molecular Biology Part A (521-211) Biochemistry & Molecular Biology Part B (521-212) 2009 and subsequently:</p> <table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>BCMB20002 Biochemistry and Molecular Biology</td><td>Semester 1, Semester 2</td><td>12.50</td></tr></table> <p>Note that the pre-2009 subject "Biochemistry & Molecular Biology Part A" and the 2009 subject "Biochemistry & Molecular Biology" are not identical despite having the same subject code. Only the subject "Biochemistry & Molecular Biology" offered in 2009 and subsequently acts as a stand-alone prerequisite.</p> <p>BBiomedicine students</p> <table><tr><th>Subject</th><th>Study Period Commencement:</th><th>Credit Points:</th></tr><tr><td>BIOM20001 Molecular and Cellular Biomedicine</td><td>Semester 1</td><td>25</td></tr></table> <p>BBiomedSc Students 521-213 Integrated Biomedical Science I AND 536-250 Integrated Biomedical Science II Other combinations that provide similar background will be considered by the coordinator.</p>			Subject	Study Period Commencement:	Credit Points:	BCMB20002 Biochemistry and Molecular Biology	Semester 1, Semester 2	12.50	Subject	Study Period Commencement:	Credit Points:	BIOM20001 Molecular and Cellular Biomedicine	Semester 1	25
Subject	Study Period Commencement:	Credit Points:													
BCMB20002 Biochemistry and Molecular Biology	Semester 1, Semester 2	12.50													
Subject	Study Period Commencement:	Credit Points:													
BIOM20001 Molecular and Cellular Biomedicine	Semester 1	25													
Corequisites:	None														
Recommended Background Knowledge:	None														
Non Allowed Subjects:	Students cannot enrol in and gain credit for this subject if previously obtained credit for pre-2009 subject (521-303) Molecular Aspects of Cell Biology.														
Core Participation Requirements:	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 the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/														
Coordinator:	Assoc Prof Marie Bogoyevitch														
Contact:	marieb@unimelb.edu.au (mailto:marieb@unimelb.edu.au)														
Subject Overview:	To complement the information explosion of the new genomic era, it is essential to appreciate the cellular architecture of cells and how the delivery of proteins to their correct locations in the cell is crucial for the complex intracellular signalling pathways that control cell morphology, organisation and behaviour. Topics covered include compartmentalisation in eukaryotic cells; intracellular RNA and protein traffic; the molecular structure, function and biogenesis of subcellular organelles; protein folding and maturation; vesicle-mediated transport; structure and function of the extracellular matrix and cell adhesion molecules and their role in diseased														

	states such as malignancies; cellular stress responses and linked signal transduction events; cytoskeletal structures and the signal transduction processes regulating the assembly and disassembly of actin-cytoskeleton; molecular processes determining cell movement and shape changes; imaging of processes within live cells. Students should acquire an understanding of the relationships between molecular design, cellular organisation and biological function of normal, stressed and malignant eukaryotic cells, as well as detailed knowledge of the major experimental strategies for investigating the molecular basis of these relationships. 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.
Objectives:	This subject will provide a molecular explanation to facets of cell biology. This molecular level understanding of cell biology builds upon material provided in biochemistry and molecular biology year 2 level subjects and extends material taught in other biochemistry and molecular biology year 3 level subjects such as Functional Genomics & Bioinformatics and Protein Structure & Function. It will effectively complement offerings in other Departments that focus on cell biology, infection and immunity, neurobiology etc.
Assessment:	3 hour written exam held in examination period (70%); two 1 hour written examinations held during semester (7.5% x 2 = 15%); 1,000 word essay assessment due mid-semester (15%).
Prescribed Texts:	Alberts et al Molecular Biology of the Cell, 5th edition, Garland Science
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 completion of this subject, students should have developed the following generic skills: <ul style="list-style-type: none"> # Critical analysis of research papers and other resource material. # Capacity to develop ideas from theoretical principles to practical explanations through observing and reporting research literature. # The capacity to integrate knowledge across disciplines. # The ability to comprehend a question, evaluate the relevant information and communicate an answer.
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. Students undertaking this subject will be expected to regularly access an internet-enabled computer.
Related Course(s):	Bachelor of Biomedical Science Bachelor of Engineering (Biomedical)Biocellular Bachelor of Science
Related Majors/Minors/Specialisations:	Animal Cell Biology (specialisation of Cell and Developmental Biology major) Biochemistry and Molecular Biology Biotechnology (pre-2008 Bachelor of Science) Cell Biology (pre-2008 Bachelor of Science) Genetics Molecular Biotechnology (specialisation of Biotechnology major) Plant Cell Biology and Development (specialisation of Cell and Developmental Biology major) Reproduction and Development (specialisation of Cell and Developmental Biology major) Science credit subjects* for pre-2008 BSc, BASc and combined degree science courses