

BIOL10002 Biomolecules and Cells

Credit Points:	12.50						
Level:	1 (Undergraduate)						
Dates & Locations:	This subject is not offered in 2013.						
Time Commitment:	Contact Hours: 3 x one hour lectures per week, 18 hours of workshops (1 hour of theory workshop and 2 hours of practical workshop per fortnight), 6 hours of additional problem solving classes (1 hour per fortnight), 24 hours of pre-and post laboratory activities (2 hours per week), 24 hours of e-learning, online activities including independent learning tasks (2 hours per week). Total Time Commitment: Estimated total time commitment of 120 hours						
Prerequisites:	None						
Corequisites:	None						
Recommended Background Knowledge:	None						
Non Allowed Subjects:	Credit cannot be gained for this subject and any of # 650-131 Biomed: Molecules, Cells and Organisms (prior to 2008)						
	<table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>BIOL10004 Biology of Cells and Organisms</td> <td>Not offered 2013</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	BIOL10004 Biology of Cells and Organisms	Not offered 2013	12.50
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Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. This subject requires all students to actively and safely participate in laboratory activities. Students who feel their disability may impact upon their participation are encouraged to discuss this with the Subject Coordinator and the Disability Liaison Unit. http://www.services.unimelb.edu.au/disability/						
Contact:	Biology Laboratory Level 5 Redmond Barry Building Tel: (03) 8344 4881 Fax: (03) 9347 0604 Email: biology-info@unimelb.edu.au (mailto:biology-info@unimelb.edu.au)						
Subject Overview:	This subject aims to familiarise students with modern concepts of molecular and cell biology as a foundation for further studies in biomedicine. Topics include the chemical building blocks of life, cell evolution and endosymbiosis; cell organelles, their structure and function; movement across membranes, enzymes and cellular reactions, energy transformations and energy recycling, cell division: mitosis and meiosis; Multicellularity depends on homeostasis and the physiological systems that regulate this process. In addition this subject introduces students to stem cells and their therapeutic potential and embryonic development (how life begins).						
Objectives:	At the completion of this subject, students should: <ul style="list-style-type: none"> # be aware of the basic processes of life; # be familiar with the structure and function of both prokaryotic and eukaryotic cells; # understand the two cellular processes for harvesting energy: respiration and photosynthesis; # understand biological processes from the level of biomolecules to whole organism biology; # understand that multicellularity in animals depends on homeostasis; # have a basic knowledge of animal structure and function and organ systems including digestive, endocrine, nervous, immune, circulation, respiration, excretion and reproduction; 						

	<ul style="list-style-type: none"> # have a basic knowledge of stem cells and their therapeutic potential; # have a basic understanding of animal diversity, # understand the relationships between tissues and organs in the whole animal via lectures and laboratory-based activities; # appreciate how and why organisms are studied by taking part in laboratory-based learning activities; # have developed skills in laboratory procedures such as correct use of microscopes; recording observations; hypothesis testing; data analysis, presentation and interpretation.
Assessment:	A 45 minute multiple choice test held mid-semester (10%); work in practical classes during the semester including assessment of practical skills and written work not exceeding 1000 words (30%); completion of 5 Independent Learning Tasks throughout the semester (5%); a written assignment not exceeding 500 words (5%); a 3hr examination on theory and practical work in the examination period (50%). A pass in the practical work is necessary to pass the subject.
Prescribed Texts:	D Sadava, D M Hillis, H G Heller, M R Berenbaum, Life. 9th Ed. Sinaver/Freeman, 2011
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>At the completion of this subject, students should:</p> <ul style="list-style-type: none"> # be able to critically assess and assimilate new knowledge; # to use these skills to solve problems; # be able to complete basic manipulations with laboratory equipment, and dissection techniques. # develop skills in recording observations, analysis and interpretation of data, # be able to work in small groups
Notes:	<p>This subject is only available to students enrolled in the Bachelor of Biomedicine.</p> <p>This subject involves the use of animals that form an essential part of the learning objectives for this subject. Please note: There are some non-dissection alternatives for those who have strong philosophical objections and these and other alternatives can be discussed with the subject co-ordinator.</p> <p>Required Equipment - Laboratory coat & marker pen.</p>
Related Course(s):	Bachelor of Biomedicine