BIOL10002 Biomolecules and Cells

Credit Points:	12.50
Level:	1 (Undergraduate)
Dates & Locations:	2012, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 3 x one hour lectures per week, 36 hours of practical activities pre-laboratory activities and computer workshops (independent learning tasks), averaging 3 hours per week and 6 one-hour tutorial/workshop sessions during the semester. 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)

Subject	Study Period Commencement:	Credit Points:
BIOL10004 Biology of Cells and Organisms	Semester 1	12.50

Core Participation Requirements:	For the purposes of considering applications for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005) and Students Experiencing Academic Disadvantage Policy, 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/
Coordinator:	Dr Mary Familari
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)** **Director of First Year Studies in Biology** Dr Mary Familari Email: **m.familari@unimelb.edu.au (mailto: m.familari@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 includes a discussion of homeostasis, and cells as part of physiological systems. In this context, animal diversity and the ecological interactions that have shaped form and function form an important part of this subject. 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: # 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; # have a basic knowledge of stem cells and their therapeutic potential; # have an understanding of animal diversity, and the ecological interactions that have shaped form and function; # 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 recording observations, analysis and interpretation of data, the use of a microscope and dissection techniques;
Assessment:	A 45 minute, on-line multiple choice test held mid-semester (10%); work in practical classes during the semester made up of a combination of written work not exceeding 1000 words, assessment of practical skills within the practical class, and no more than 5 short multiple choice tests (20%), completion of 5 Independent Learning Tasks throughout the semester (5%); a written assignment not exceeding 1000 words, (5%) a 3-hour written examination on theory and practical work in the examination period (60%). 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, 2009
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:	At the completion of this subject students should: # 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; # develop skills in recording observations, analysis and interpretation of data, and dissection techniques; # be able to work in small groups;
Notes:	This subject is only available to students enrolled in the Bachelor of Biomedicine. 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. equired Equipment - laboratory coat, microscope slides, coverslips & marker pen.
Related Course(s):	Bachelor of Biomedicine