BIOL10004 Biology of Cells and Organisms

Credit Points:	12.5
Level:	1 (Undergraduate)
Dates & Locations:	2016, 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, 1 hour per week of tutorials or workshops, 2 hours of practical work per fortnight and 3 hours per week of e-learning including independent learning tasks, pre and post laboratory activities. Total Time Commitment: Estimated total time commitment of 170 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Credit cannot be gained for this subject and any of

Subject	Study Period Commencement:	Credit Points:
BIOL10002 Biomolecules and Cells	Semester 1	12.50

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
Coordinator:	Assoc Prof Dawn Gleeson, Dr Andrew Drinnan
Contact:	**biology-info@unimelb.edu.au (mailto:biology-info@unimelb.edu.au)**
Subject Overview:	This objective of this subject is to familiarise students with modern concepts of cell and organismal biology, including structure and function of multicellular organisms including cell function, systems involved in energy transformations, nutrition, water uptake, excretion, gas exchange, circulation, and immune responses; plant and animal reproduction and development; mechanisms involved in responsiveness and coordination: hormonal control in plants and animals, and nervous systems in animals; and animal movement and behaviour.
Learning Outcomes:	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 cellular processes for harvesting energy: respiration and photosynthesis. # have a basic knowledge of the structure and function of plants, plant growth, reproduction and defence mechanisms. # understand that multicellularity in animals depends on homeostasis. # have a basic knowledge of animal structure and function of digestion, circulation, respiration, excretion, reproduction, immune system, nervous and endocrine systems.

	# have a basic knowledge of stem cells and their therapeutic potential. # understand the evolutionary processes that bring about biological diversity, and the ecological interactions that have shaped particular adaptations. # appreciate the different approaches to the study of animal behaviour, and understand how and why animals behave the way they do. # understand the relationships between tissues and organs in the whole animal and appreciate how and why organisms are studied. # have developed skills in laboratory procedures such as correct use of microscopes; recording observations; hypothesis testing; data analysis, presentation and interpretation.
Assessment:	a 20 minute, multiple choice test held mid-semester (5%); work related to practical classes during the semester with a combination of assessment of practical skills within the practical class, completion of 4 or 5 on-line pre-practical tests; written work within the practical not exceeding 500 words; and 4 or 5 short multiple choice tests (25%); completion of 5 Independent Learning Tasks throughout the semester (5%); a written assignment not exceeding 500 words (5%), a 3 hour examination on theory and practical work in the examination period (60%). Satisfactory completion of practical work is necessary to pass the subject (i.e. an 80% attendance at the practical classes together with a result for the assessed practical work of at least 50%).
Prescribed Texts:	R B Knox, P Y Ladiges, B K Evans and R Saint, Biology, An Australian Focus 5th Ed, McGraw-Hill, 2014.
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2016/B-ARTS)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2016/B-COM)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2016/B-ENVS)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2016/B-MUS)** You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
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 available for science credit to students enrolled in the BSc (both pre-2008 and new degrees), BASc or a combined BSc course. Many second year subjects require the completion of this subject and BIOL10005 Genetics & the Evolution of Life. 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. Required equipment - laboratory coat.
Related Course(s):	Bachelor of Agriculture
Related Majors/Minors/ Specialisations:	Master of Engineering (Biomedical with Business) Master of Engineering (Biomedical) Production Animal Health Science-credited subjects - new generation B-SCI and B-ENG. Sustainable Production

Related Breadth Track(s):	Ecology, Evolution and Humanity Ecology Microbiology and immunology General Genetics Biotechnology Cell and Developmental Biology Genetics and Society