

# BIOL10004 Biology of Cells and Organisms

<b>Credit Points:</b>	12.50						
<b>Level:</b>	1 (Undergraduate)						
<b>Dates &amp; Locations:</b>	2012, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.						
<b>Time Commitment:</b>	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						
<b>Prerequisites:</b>	None						
<b>Corequisites:</b>	None						
<b>Recommended Background Knowledge:</b>	None						
<b>Non Allowed Subjects:</b>	Credit cannot be gained for this subject and any of # 650-131 Biomed: Molecules, Cells & Organisms (prior to 2008) <table border="1" data-bbox="387 869 1485 1016"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>BIOL10002 Biomolecules and Cells</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	BIOL10002 Biomolecules and Cells	Semester 1	12.50
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BIOL10002 Biomolecules and Cells	Semester 1	12.50					
<b>Core Participation Requirements:</b>	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. <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a>						
<b>Coordinator:</b>	Dr Richard Wetherbee						
<b>Contact:</b>	Biology Laboratory Level 5 Redmond Barry Building <b>Tel:</b> (03) 8344 4881 <b>Fax:</b> (03) 9347 0604 <b>Email:</b> <a href="mailto:biology-info@unimelb.edu.au">biology-info@unimelb.edu.au</a> ( <a href="mailto:biology-info@unimelb.edu.au">mailto:biology-info@unimelb.edu.au</a> ) <b>Director of First Year Studies in Biology</b> Dr Mary Familiar Email: <a href="mailto:m.familiari@unimelb.edu.au">m.familiari@unimelb.edu.au</a> ( <a href="mailto:m.familiari@unimelb.edu.au">mailto:m.familiari@unimelb.edu.au</a> )						
<b>Subject Overview:</b>	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.						
<b>Objectives:</b>	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;						

	<ul style="list-style-type: none"> <li># have a basic knowledge of the structure and function of plants, plant growth, reproduction and defence mechanisms;</li> <li># understand that multicellularity in animals depends on homeostasis;</li> <li># have a basic knowledge of animal structure and function of digestion, circulation, respiration, excretion, reproduction, immune system, nervous and endocrine systems;</li> <li># understand the relationships between tissues and organs in the whole animal via lectures and laboratory-based activities;</li> <li># understand the evolutionary processes that bring about biological diversity, and the ecological interactions that have shaped particular adaptations.</li> <li># appreciate the different approaches to the study of animal behaviour, and understand how and why animals behave the way they do.</li> <li># appreciate how and why organisms are studied by taking part in laboratory-based learning activities;</li> <li># have developed skills in recording observations, analysis and interpretation of data, the use of a microscope and dissection techniques;</li> </ul>
<b>Assessment:</b>	A 45 minute 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, or up to 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.
<b>Prescribed Texts:</b>	R B Knox, P Y Ladiges, B K Evans and R Saint, Biology, An Australian Focus 4th Ed, McGraw-Hill, 2009.
<b>Breadth Options:</b>	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> <li># <b>Bachelor of Arts</b> (<a href="https://handbook.unimelb.edu.au/view/2012/B-ARTS">https://handbook.unimelb.edu.au/view/2012/B-ARTS</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2012/B-COM">https://handbook.unimelb.edu.au/view/2012/B-COM</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2012/B-ENVS">https://handbook.unimelb.edu.au/view/2012/B-ENVS</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2012/B-MUS">https://handbook.unimelb.edu.au/view/2012/B-MUS</a>)</li> </ul> <p>You should visit <a href="http://breadth.unimelb.edu.au/breadth/info/index.html">learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)</a> and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<p>At the completion of this subject, students should:</p> <ul style="list-style-type: none"> <li># be able to critically assess and assimilate new knowledge to use these skills to solve problems</li> <li># be able to complete basic manipulations with laboratory equipment</li> <li># develop skills in recording observations, analysis and interpretation of data, and dissection techniques.</li> <li># be able to work in small groups.</li> </ul>
<b>Notes:</b>	<p>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.</p> <p>Many second year subjects require the completion of this subject and BIOL10005 Genetics &amp; the Evolution of Life.</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, microscope slides, coverslips &amp; marker pen.</p>
<b>Related Course(s):</b>	Bachelor of Agriculture Bachelor of Biomedicine
<b>Related Majors/Minors/Specialisations:</b>	Biology and Botany Environmental Studies Major Master of Engineering (Biomedical)

	Science credit subjects* for pre-2008 BSc, BASc and combined degree science courses Science-credited subjects - new generation B-SCI and B-ENG. Core selective subjects for B-BMED.
<b>Related Breadth Track(s):</b>	Ecology, Evolution and Humanity Ecology Neuroscience Microbiology and immunology General Genetics Biotechnology Cell & Developmental Biology Genetics and Society