

# BIOL10004 Biology of Cells and Organisms

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| <b>Credit Points:</b>                    | 12.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Level:</b>                            | 1 (Undergraduate)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Dates &amp; Locations:</b>            | 2010, Parkville<br>This subject commences in the following study period/s:<br>Semester 1, Parkville - Taught on campus.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Time Commitment:</b>                  | Contact Hours: 3 x one hour lectures per week, 30 hours of practical activities during the semester, pre-laboratory activities and computer workshops (independent learning tasks), averaging 3 hours per week and 10 one-hour tutorial/workshop sessions during the semester.<br>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<br><ul style="list-style-type: none"> <li># 600-141 Biology of Cells and Organisms (prior to 2004)</li> <li># 600-131 Biomed: Molecules, Cells &amp; Organisms (prior to 2004)</li> <li># 650-131 Biomed: Molecules, Cells &amp; Organisms (prior to 2008)</li> <li># 202-103 Biology for Land and Food Resources (prior to 2009)</li> </ul>                                                                                                                                                                                                                                            |
| <b>Core Participation Requirements:</b>  | 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.                                                                                                                                                      |
| <b>Coordinator:</b>                      | Assoc Prof Dawn Gleeson                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Contact:</b>                          | Biology Laboratory<br>Level 5 Redmond Barry Building<br><b>Tel:</b> (03) 8344 4881<br><b>Fax:</b> (03) 9347 0604<br><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> )<br><b>Director of First Year Studies in Biology</b><br>Assoc Prof Dawn Gleeson<br>Email: <a href="mailto:d.gleeson@unimelb.edu.au">d.gleeson@unimelb.edu.au</a> ( <a href="mailto:d.gleeson@unimelb.edu.au">mailto:</a> )                                                                                                            |
| <b>Subject Overview:</b>                 | 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>                       | The aim of this subject is to familiarise students with modern concepts of cell and organismal biology, including structure and function.<br><br>At the completion of this subject, students should: <ul style="list-style-type: none"> <li># have a knowledge of the basic processes of life;</li> <li># be familiar with the structure and function of both prokaryotic and eukaryotic cells;</li> <li># understand the structure and function of organisms, and how these features contribute to the overall functioning of organisms;</li> <li># understand the mechanisms of plant and animal reproduction and development;</li> </ul> |

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|                                                    | <ul style="list-style-type: none"> <li># be able to complete basic manipulations with laboratory equipment, in particular the use of microscopes; and</li> <li># develop skills in recording observations, analysis and interpretation of data, and dissection techniques.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Assessment:</b>                                 | A 40 minute, on-line multiple choice test held mid-semester (10%); work in practical classes during the semester, made up of written work not exceeding 1500 words, assessment of practical skills within the practical class, and no more than 4 short multiple choice tests (25%), completion of between 4 and 6 independent learning tasks throughout the semester (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/2010/B-ARTS">https://handbook.unimelb.edu.au/view/2010/B-ARTS</a>)</li> <li># <b>Bachelor of Commerce</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-COM">https://handbook.unimelb.edu.au/view/2010/B-COM</a>)</li> <li># <b>Bachelor of Environments</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-ENVS">https://handbook.unimelb.edu.au/view/2010/B-ENVS</a>)</li> <li># <b>Bachelor of Music</b> (<a href="https://handbook.unimelb.edu.au/view/2010/B-MUS">https://handbook.unimelb.edu.au/view/2010/B-MUS</a>)</li> </ul> <p>You should visit <b>learn more about breadth subjects</b> (<a href="http://breadth.unimelb.edu.au/breadth/info/index.html">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># have a knowledge of the basic processes of life;</li> <li># be familiar with the structure and function of both prokaryotic and eukaryotic cells;</li> <li># understand the structure and function of organisms, and how these features contribute to the overall functioning of organisms;</li> <li># understand the mechanisms of plant and animal reproduction and development;</li> <li># be able to complete basic manipulations with laboratory equipment, in particular the use of microscopes; and</li> <li># develop skills in recording observations, analysis and interpretation of data, and dissection techniques.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Notes:</b>                                      | <p>Students enrolled in the BSc (both pre-2008 and new degrees), BASc or a combined BSc course will receive science credit for the completion of this subject.</p> <p>Experiments involving the use of animals are an essential part of this subject; exemption from these experiments is not possible.</p> <p>This is a joint botany and zoology subject.</p> <p>Students studying biology are expected to enrol in both this subject and <b>650-142 Genetics &amp; The Evolution of Life</b> (<a href="https://handbook.unimelb.edu.au/view/2010/650-142">/view/2010/650-142</a>) .</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Related Course(s):</b>                          | <p>Bachelor of Agriculture<br/>         Bachelor of Optometry<br/>         Bachelor of Science<br/>         Bachelor of Veterinary Science(PV)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Related Majors/Minors/<br/>Specialisations:</b> | <p>Biology and Botany<br/>         Environmental Studies Major<br/>         Master of Engineering (Biomedical)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |