

## BIOL10005 Genetics & The Evolution of Life

<b>Credit Points:</b>	12.50
<b>Level:</b>	1 (Undergraduate)
<b>Dates &amp; Locations:</b>	2010, Parkville This subject commences in the following study period/s: Semester 2, 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 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 # 600-142 Genetics & the Evolution of Life (prior to 2004) # 600-132 Biomed: Genetics & Biodiversity (prior to 2004) # 650-132 Biomed: Genetics & Biodiversity (prior to 2008)
<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 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> Assoc Prof Dawn Gleeson 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>	Topics studied include the nature of variation, inheritance, genes and chromosomes, human genetics, DNA replication, gene action and expression, population genetics, selection, the genetics of speciation, molecular evolution, evolutionary biology and the origin of life, classification of organisms diversity of life, communities, ecosystems and the relationship of organisms to their environment, human impact, preserving habitats and genetic variation.
<b>Objectives:</b>	At the completion of this subject, students should be able to: # understand the basic mechanisms of inheritance, recombination and mutation; # know the structure of DNA, its replication and the molecular basis of gene action; # understand the nature of genetic variation in populations, natural selection, microevolution, reproductive isolation and speciation; # understand the evidence for the evolution of life understand and apply the principles of classification; # understand the diversity of organisms and their relationship to each other and the environment; and

	# be aware of the concepts of population ecology, community structure and ecosystem.
<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>Students should develop generic skills in:</p> <ul style="list-style-type: none"> <li># manipulating laboratory equipment, in particular using microscopes and gel electrophoresis;</li> <li># the recording of observations and the analysis and interpretation of data;</li> <li># the statistical analysis of genetic data; and</li> <li># accessing information sources and discerning use of the world wide web.</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>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, genetics and zoology subject.</p> <p>Students studying biology are expected to enrol in both this subject and <b><u>650-141 Biology of Cells and Organisms</u></b> (<a href="http://handbook.unimelb.edu.au/view/2010/650-141">/view/2010/650-141</a>)</p>
<b>Related Course(s):</b>	<p>Bachelor of Agriculture          Bachelor of Optometry          Bachelor of Science          Bachelor of Veterinary Science(PV)</p>
<b>Related Majors/Minors/Specialisations:</b>	<p>Biology and Botany          Environmental Studies Major          Master of Engineering (Biomedical)</p>