

## GENE20002 Genes and Genomes

<b>Credit Points:</b>	12.50																		
<b>Level:</b>	2 (Undergraduate)																		
<b>Dates &amp; Locations:</b>	2012, 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, 1 x one hour problem class per week. Total Time Commitment: Estimated total time commitment of 120 hours																		
<b>Prerequisites:</b>	<p><b>EITHER</b> Both</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>BIOL10004 Biology of Cells and Organisms</td> <td>Semester 1</td> <td>12.50</td> </tr> <tr> <td>BIOL10005 Genetics &amp; The Evolution of Life</td> <td>Semester 2</td> <td>12.50</td> </tr> </tbody> </table> <p><b>OR</b> Both</p> <table border="1"> <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> <tr> <td>BIOL10003 Genes and Environment</td> <td>Semester 2</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	BIOL10004 Biology of Cells and Organisms	Semester 1	12.50	BIOL10005 Genetics & The Evolution of Life	Semester 2	12.50	Subject	Study Period Commencement:	Credit Points:	BIOL10002 Biomolecules and Cells	Semester 1	12.50	BIOL10003 Genes and Environment	Semester 2	12.50
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<b>Corequisites:</b>	None																		
<b>Recommended Background Knowledge:</b>	None																		
<b>Non Allowed Subjects:</b>	None																		
<b>Core Participation Requirements:</b>	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a>																		
<b>Coordinator:</b>	Assoc Prof Meryl Davis																		
<b>Contact:</b>	<b>Email: <a href="mailto:m.davis@unimelb.edu.au">m.davis@unimelb.edu.au</a> (mailto:m.davis@unimelb.edu.au)</b>																		
<b>Subject Overview:</b>	The subject emphasises the molecular basis of gene structure and expression in prokaryotes and eukaryotes; the processes of DNA replication, mutation and recombination; the methods used for gene isolation, analysis; and application to genetic problems, an introduction to the fundamental genetic principles underlying development and the molecular evolution of genes and genomes.																		
<b>Objectives:</b>	Completion of this subject is expected to enhance a student's: understanding of the molecular basis of gene structure, expression and regulation in prokaryotes and eukaryotes;																		

	understanding of DNA replication, recombination and mutagenesis; appreciation of the organization of genes and genomes in a variety of organisms and the nature of molecular evolution; skills in solving problems and analysing data using a molecular genetic approach.
<b>Assessment:</b>	A written class test held mid-semester (10%); two online assignments of equal value during the semester (15% in total); a 2-hour written examination in the examination period (75%)
<b>Prescribed Texts:</b>	A J Griffiths et al, Introduction to Genetic Analysis, 10th Ed. W H Freeman and Co.
<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 <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>	Completion of this subject is expected to provide students with the following skills which are transferable to new settings even though they have been acquired in the context of studies in Genetics: understanding how cross-disciplinary approaches can yield fundamental scientific knowledge; critical thinking, problem-solving and analytical skills to solve new problems; development of hypotheses based on observations; planning effective work schedules to meet deadlines for assessable work and; group and collaborative interactions.
<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>This subject is available for credit in the Bachelor of Biomedicine.</p> <p>Both GENE20001 Principles of Genetics and either GENE20002 Genes and Genomes or BIOM20001 Molecular and Cellular Biomedicine are prerequisites for third year level genetics subjects.</p>
<b>Related Majors/Minors/Specialisations:</b>	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>	General Genetics