

# CHEN90008 Biology for Engineers

<b>Credit Points:</b>	12.50																		
<b>Level:</b>	9 (Graduate/Postgraduate)																		
<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 + 1 x one hour tutorial per week + 4 x three hours of laboratory work per semester Total Time Commitment: Estimated 120 Hours																		
<b>Prerequisites:</b>	Students must have completed the following subjects (or equivalent) prior to enrolling in this subject: <table border="1" data-bbox="387 600 1484 864"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>CHEM10004 Chemistry 2</td> <td>Summer Term, Semester 2</td> <td>12.50</td> </tr> <tr> <td>MAST10007 Linear Algebra</td> <td>Summer Term, Semester 1, Semester 2</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	CHEM10004 Chemistry 2	Summer Term, Semester 2	12.50	MAST10007 Linear Algebra	Summer Term, Semester 1, Semester 2	12.50									
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<b>Corequisites:</b>	None																		
<b>Recommended Background Knowledge:</b>	None																		
<b>Non Allowed Subjects:</b>	Credit will not be given for both this subject and EITHER of the following combinations of subjects (i) and (ii):  (i) both of the following subjects: <table border="1" data-bbox="387 1196 1484 1402"> <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>OR</p> (ii) both of the following subjects: <table border="1" data-bbox="387 1496 1484 1702"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>BIOL10003 Genes and Environment</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>BIOL10002 Biomolecules and Cells</td> <td>Semester 1</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:	BIOL10003 Genes and Environment	Semester 2	12.50	BIOL10002 Biomolecules and Cells	Semester 1	12.50
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<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 Co-ordinator 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 Sally Louise Gras																		
<b>Contact:</b>	Email: <a href="mailto:sgras@unimelb.edu.au">sgras@unimelb.edu.au</a> ( <a href="mailto:sgras@unimelb.edu.au">mailto:sgras@unimelb.edu.au</a> )																		

<b>Subject Overview:</b>	Knowledge of the basic processes of life; structure and function of both prokaryotic and eukaryotic cells; structure of DNA, its replication and the molecular basis of gene action; basic mechanisms of inheritance, recombination and mutation; biomolecular and bioprocess engineering; how prokaryotic and eukaryotic cells are used in bioengineering, including how they may be integrated into unit operations; knowledge of traditional bioprocess engineering operations such as brewing; how generic methods are improving traditional bioprocess engineering and enabling new technologies.
<b>Objectives:</b>	<ul style="list-style-type: none"> <li># Develop understanding of key aspects of biology relevant to engineering</li> <li># Develop fundamental understanding of microbiology, bioprocesses and principles of product recovery</li> </ul>
<b>Assessment:</b>	A multiple choice test taking approximately 35 minutes 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 (total 25%) Independent learning tasks (5%) A 3 hour written examination on theory and practical work (60%) A pass in the practical work and a mark of 40% or more in the end of semester examination are required to pass the subject
<b>Prescribed Texts:</b>	None
<b>Recommended Texts:</b>	None
<b>Breadth Options:</b>	This subject is not available as a breadth subject.
<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>On completion of the subject, students should be able to demonstrate:</p> <ul style="list-style-type: none"> <li># Ability to apply knowledge of basic science and engineering fundamentals</li> <li># Ability to communicate effectively, not only with engineers, but also with the community at large</li> <li># Ability to undertake problem identification, formulation and solution</li> <li># Ability to record observations and analyse and interpret data</li> </ul>
<b>Related Course(s):</b>	Bachelor of Engineering
<b>Related Majors/Minors/Specialisations:</b>	B-ENG Chemical and Biomolecular Engineering stream Master of Engineering (Biomolecular)