

411-254 Biomolecular Process Principles

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: 34 hours of lectures, 6 hours of tutorials and 10 hours of practical work. Total Time Commitment: Not available
Prerequisites:	610-141 Chemistry A; 610-142 Chemistry B; 650-141 Biology of Cells and Organisms
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	<p><p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.</p> <p><p>It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability</p></p> </p>
Coordinator:	Mr G Martin
Subject Overview:	Definition and scope of biomolecular and bioprocess engineering. Survey of industrial applications. The role of the biomolecular engineer. Structure, function and properties of biological macromolecules. Carbohydrates. Proteins. Lipids. Nucleic acids. Stability and physical properties of biomacromolecules. Roles of enzymes, microbial, plan and animal cells in Microbiological methods. Microbial applications in process engineering. Introduction to microbial cell culture and bioreactor design. Structure and function of plant and animal cells. Plant tissue culture methods. Bioproducts from plant cells. Animal cell culture methods and applications. Introduction to product separation and biological waste treatment. Modelling, optimisation and improvement of bioprocesses. Bioprocess regulation and economics.
Assessment:	One written 3-hour end-of-semester examination (90%); practical work assignments not exceeding a combined total of 1000 words (10%).
Prescribed Texts:	None
Recommended Texts:	Information Not Available
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	<p>The subject will enhance the following generic skills:</p> <ul style="list-style-type: none"> # Capacity for independent thought; # Ability to communicate effectively; # Ability to work in a team (practical work component);

	<ul style="list-style-type: none"># Awareness of advanced technologies in the discipline;# The ability to comprehend complex concepts and communicate lucidly this understanding.
Related Course(s):	Bachelor of Engineering (Chemical and Biomolecular Engineering)