

436-387 Cellular & Tissue Biomechanics

Credit Points:	12.500
Level:	Undergraduate
Dates & Locations:	2008, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: Thirty-two hours of lectures, 12 hours of tutorials and 4 hours of laboratory work Total Time Commitment: Not available
Prerequisites:	421-285 Bioengineering Systems Modelling 1 and 521-225 Intergrated Biomedical Science and 536-225 Intergrated Biomedical Science II
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>
Subject Overview:	<p>This subject examines the mechanics of cells and tissues in a variety of contexts, including the fundamental mechanical behaviour of muscle cells through to whole body injury mechanics and forensic investigation. Various modes of tissue injury will be outlined, with a consideration given to the variability of responses between tissues and from person to person. Cell, tissue and whole body mechanics will be taught using a variety of case studies, ranging from situations leading to muscle strain and tears to impact mechanics in car crashes. With a focus on using mechanics to understand various forms of damage to cells, tissues, consideration will be given to forensic reconstruction of accidents, to body protection and safety.</p> <p>Reference will be made to the legal context in which forensic engineering is carried out. Engineering mechanics and computational analysis will be interwoven throughout the case studies.</p>
Assessment:	One 2-hour examination (40%) and two labs (10%), 2 field trips (10%), four assignments of 1000 words each or equivalent (40%).
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>At the end of this subject a student should have an:</p> <ul style="list-style-type: none"> # ability to apply knowledge of basic science and engineering fundamentals; # in-depth technical competence in at least one engineering discipline; # ability to undertake problem identification, formulation and solution;

	<ul style="list-style-type: none"># ability to utilise a systems approach to design and operational performance;# ability to function effectively as an individual and in multidisciplinary and multi-cultural teams, with a capacity to be a leader or manager as well as an effective team leader.
Related Course(s):	Bachelor of Engineering (Biomedical) Biomechanics Bachelor of Engineering (Biomedical) Biocellular Bachelor of Engineering (Biomedical) Bioinformatics Bachelor of Engineering (Biomedical) Biosignals Bachelor of Engineering (Engineering Management) Mechanical & Manufacturing Bachelor of Engineering (Mechanical & Manufacturing)/Bachelor of Commerce Bachelor of Engineering (Mechanical and Manufacturing Engineering)