

411-394 Tissue Engineering

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-six hours of lectures, 12 hours of tutorials Total Time Commitment: Not available
Prerequisites:	521-225 Integrated Biomedical Science, 536-225 Integrated 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>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>
Coordinator:	Dr A O'Connor
Subject Overview:	History, current status and potential of tissue engineering, major materials and fabrication methods for biomaterial scaffolds, scaffold strength and degradation. Cell-surface interactions, biocompatibility and surface engineering. The influence and delivery of growth factors in tissue engineering. Scale-up issues in vitro and in vivo, quantitative aspects of tissue engineering (including cell migration, molecular transport and mechanics in-vivo). Transplantation of engineered cells and tissues, in-vivo synthesis of tissues and organs, use of pluripotent stem cells. Clinical applications of tissue engineering such as bone regeneration vascular grafts, breast reconstruction, cardiac and corneal prostheses, artificial organs (eg. pancreas).
Assessment:	An end-of-semester examination of three hours contributing 80% of the final assessment and an assignment not exceeding 4000 words contributing 20% of the assessment, due in the second half of the semester.
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:	<ul style="list-style-type: none"> # apply knowledge of basic science and engineering fundamentals; # undertake problem identification, formulation and solution; # utilise a systems approach to design and operational performance;

	# function effectively as an individual and in multi-disciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team.
Related Course(s):	Bachelor of Engineering (Biomedical)Biocellular