421-693 Anatomy & Physiology for Engineers

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - Taught on campus.
Time Commitment:	Contact Hours: 36 Hours; Non contact time commitment 84 Hours Total Time Commitment: Not available
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	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. 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
Coordinator:	Dr Chris Briggs
Contact:	Assoc. Professor Chris Briggs Department of Anatomy & Cell Biology, Physiology Ph: + 61 3 8344 5776 Email: c.briggs@unimelb.edu.au
Subject Overview:	This subject introduces engineering students to the microscopic appearance of cells and tissues and the digital imaging techniques used to display them; the appearance of bone and cartilage, as well as the organisation of dense connective tissues; skeletal muscle structure and function and the effects of training and disuse; the principles of excitable tissues; the structure and function of the human eye and the processes involved in vision; the ear and the mechanism of hearing; physiological limits to exercise performance and the principles of exercise metabolism; the autonomic nervous system; principles of sensory motor control; cardiac mechanics and cardiac biophysics; the principles of nerve injury and repair.
Objectives:	By the end of this subject students should: # comprehend the terminology used to describe anatomical structures; the organisation of cells and tissues and the digital imaging techniques used to display them; the principles relating to the structure of connective tissues, skeletal muscle, bones and joints and the changes in skeletal muscle during training and following disuse; the principles of exercise metabolism and the physiological limits of exercise performance; the principles of excitable tissues; the structure and function of the human eye and ear and the mechanism of vision and hearing; the autonomic nervous system and the principles of sensorimotor control; cardiac mechanics and cardiac biophysics; the principles of nerve injury and repair # develop communication skills (oral and written) to describe the structure and function of the human body # appreciate the scientific basis of the knowledge of human structure and function
Assessment:	Written examination of 3 hours and a 2000 word assignment.

Prescribed Texts:	To be advised by individual lecturers
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:	On successful completion, students should be able to: # understand the biological principles underlying the structure and function of cells, tissues and organs # understand the principles of anatomical structures that make up the human body # understand the principles of exercise metabolism and the physiological limits of exercise performance; # understand the principles of excitable tissues, regulation of water and electrolyte balance, respiration and circulation, control of body movement and special senses
Related Course(s):	Master of Biomedical Engineering Master of Engineering Science(Biomedical Enginering) Master of Engineering Structures