

BMEN90015 Biomedical Engineering

Credit Points:	12.50						
Level:	9 (Graduate/Postgraduate)						
Dates & Locations:	This subject is not offered in 2013.						
Time Commitment:	Contact Hours: 2 X 2 hour lectures per week Total Time Commitment: 120 hours for the semester						
Prerequisites:	None						
Corequisites:	None						
Recommended Background Knowledge:	None						
Non Allowed Subjects:	<p>When undertaking this subject students can not gain credit for the following subject</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>421-698 Biomedical Engineering</td> <td>Not offered 2010</td> <td></td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	421-698 Biomedical Engineering	Not offered 2010	
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421-698 Biomedical Engineering	Not offered 2010						
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/						
Contact:	Email: grayden@unimelb.edu.au (mailto:grayden@unimelb.edu.au)						
Subject Overview:	Definition and scope of biomedical engineering. Brief history of medicine. Introduction to human anatomy and physiology. Description of the development of quantitative methods in biology and the role of engineering in understanding complex biological systems. Topics covered include biomedical devices, physiologic modelling of systems at various levels and the future of biomedical engineering. Introduction to professional ethics and ethics of human and animal testing.						
Objectives:	<p>On successful completion, students should be able to</p> <ul style="list-style-type: none"> # Describe the evolution in understanding of biological systems and its effect on medicine; # Describe basic aspects of human anatomy and physiology and relevant terminology, including skeletal muscle structure, structure and function of the human eye and ear and the application of visual and auditory prostheses, the function of the autonomic nervous system; cardiac mechanics and electrophysiology and the application of electrocardiograms and pacemakers; # Describe the multidisciplinary nature of biomedical engineering; # Describe the role of mathematical modelling in understanding biological systems; # Demonstrate skills in qualitative description of biological systems and medical conditions; # Demonstrate skills in constructing approximate models describing biological systems; # Describe a range of problems in which biomedical engineers may play a role; # Develop an appreciation of ethical dilemmas that arise in medical practice. 						
Assessment:	One 2-hour examination (50%) Two assignments totalling 3000 words equivalent (50%)						
Prescribed Texts:	None						
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"># 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# Ability to utilise a systems approach to design and operational performance# Capacity for independent critical thought, rational inquiry and self-directed learning# Ability to communicate effectively, with the engineering team and with the community at large
Notes:	Subject replaces 421-698 Biomedical Engineering from 2010
Related Course(s):	Master of Biomedical Engineering