521-204 Biochemistry and the Eye

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: 42 hours of lectures and six tutorials Total Time Commitment: 120 hours
Prerequisites:	Biology and chemistry are required for entry into studies for the Bachelor of Optometry.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact upon their active and safe participation in a subject are encouraged to discuss this with the relevant subject coordinator and the Disability Liaison Unit.
Coordinator:	Mr G Parslow; Dr A Jobling
Subject Overview:	The objectives are to develop an understanding of the chemical properties and functions of body constituents, metabolic and regulatory processes, particularly in relation to the eye and other tissues which have a major influence on the function and maintenance of the eye. The first part of this subject covers core biochemistry. The content progresses to deal with specific interactions in the eye. You will be introduced to the biochemical basis of diseases of the eye, the role of experimentation in the development of biochemical knowledge and the clinical relevance of ocular biochemistry and molecular biology. Major topics are the structure, function and metabolism of proteins, carbohydrates, lipids, mucopolysaccharides and nucleic acids; the specialised functions of proteins, lipids and proteoglycans, bioenergetics, ion transport, DNA replication, the genetic code, messenger RNA, protein synthesis at ribosomes; the function, composition and production of tears and aqueous humour; the extracellular matrix of the cornea, sclera and vitreous humour; the ion channel mechanisms of the retina, lens, cornea and ciliary body and the visual cycle in the retina from the genetic components of the photopigments to the biochemistry of the phototransduction cascade and retinal metabolism.
Assessment:	A 1-hour multiple choice test held mid-semester (10%); a 3-hour written examination in the examination period (90%).
Prescribed Texts:	None
Breadth Options:	This subject is a level 2 or level 3 subject and is not available to new generation degree students as a breadth option in 2008. This subject or an equivalent will be available as breadth in the future. Breadth subjects are currently being developed and these existing subject details can be used as guide to the type of options that might be available. 2009 subjects to be offered as breadth will be finalised before re-enrolment for 2009 starts in early October.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Notes:	This subject is only available to students enrolled in the Bachelor of Optometry course.
Related Course(s):	Bachelor of Optometry