536-301 Cardiovascular Health: Genes & Hormones

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 1, - Taught on campus.
Time Commitment:	Contact Hours: three x 1 hour Lectures per week plus six x 2 hour workshops per fortnight Total Time Commitment: 120 hours
Prerequisites:	**Pre 2008:** 536201/PHYS20001 and 536211/PHYS20003 and 536222/PHYS20004 OR 521213, 536250, 536225 **Post 2008:** PHYS20008 and PHYS20009 OR BIOM20001 and BIOM20002
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:	Assoc Prof Lea Delbridge
Subject Overview:	This subject focuses on the physiology of cardiovascular health with an emphasis on cardiac, vascular, renal and endocrine homeostasis. Students should develop an understanding of how genes and environment interact in early development and at maturity to shape cardiovascular health in populations and individuals. Studies will follow the programmed development of the cardiovascular system from gene to cell and organ. Three themes of study are presented. Theme 1 'Systemic Set Points' examines the mechanisms involved in the homeostatic control of whole body bloody pressure and considers how dysfunctional components of this system can contribute to hypertension. Theme2 'Cardiac Pump Function' is concerned with whole heart and heart muscle cell mechanical and electrical responses to circulatory demand and to changing hormonal influence. Theme 3 'Cardiovascular Programming' deals with the relationship between early cardiovascular modeling influences (maternal and environmental) and adult cardiovascular functional outcomes. Students will be introduced to experimental approaches and models in physiology and current controversies in cardiovascular research. Disturbances in physiological function will be studied to gain insight into the molecular and cellular bases of disease processes. The role of nutrition in cardiovascular health is considered. In this subject the lectures are supplemented with group discussions where assignment tasks are explored. Students will be introduced to the primary research literature and will consider articles of current interest to analyze for their assignments.
Objectives:	On completion of this subject students should have: # Established a sound factual understanding of cardiovascular structure, function and development at both organ and cellular levels. # Gained knowledge of the important endocrine bases for maintenance of cardiovascular homeostasis.
Assessment:	Up to three written assigments/reports (up to 1000 words each) or presentations (10-20% each). Up to three 1 hour mid-semester examinations (10-20% each).

Prescribed Texts:	None
Breadth Options:	This subject potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2009/D09)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2009/F04)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2009/A04)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2009/M05)** You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	Developed the skills to consider the role of genes and environment in shaping cardiovascular health. Achieved proficiency in reading, analyzing and evaluating current scientific literature in the field of cardiovascular pathophysiology.
Notes:	Students enrolled in the BSc (pre-2008 BSc), BASc or a combined BSc course will receive science credit for the completion of this subject. This subject is recommended for BSc students undertaking a physiology major or BBiomedSc students undertaking a specialisation in Physiological Genomics or Biotechnology and Therapeutics or BE(Biomed) students undertaking bioengineering. The material covered in this subject provides an appropriate background for those students wishing to undertake 536-304 Seminars and Experimental Physiology. Formerly known as 536-301 Integrative Physiology: Heart & Kidney. Students are expected to have regular access to an internet-enabled computer. Students are expected to be familiar with word processing, data management and graphical software packages and to be competent in electronic search techniques.
Related Course(s):	Bachelor of Biomedical Science Graduate Diploma in Biotechnology
Related Majors/Minors/ Specialisations:	Physiology