

PHTY20002 Cardiorespiratory Systems

Credit Points:	25
Level:	2 (Undergraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 62 hours lectures, 40 hours problem-based learning, 20 hours practical classes Total Time Commitment: Students will need to allow time for self-directed learning. The following hours are given as minimum requirements: 1 hour pre/post reading for lectures, 2 hours per hour of tutorial sessions and 2 hours extra per week for practical classes.
Prerequisites:	This subject is not available as a single subject. Students must be currently enrolled in the Bachelor of Physiotherapy to undertake this subject.
Corequisites:	None
Recommended Background Knowledge:	Year 1 of the Bachelor of Physiotherapy
Non Allowed Subjects:	None
Core Participation Requirements:	None
Coordinator:	Dr Jenny Hayes, Ms Anne Marie Lee
Contact:	Dr Annemarie Lee
Subject Overview:	<p>The objectives of this subject are to enable the student to gain an understanding of the integrated function of the cardiorespiratory system, the mechanisms and control of gas exchange and acid-based metabolism, cardiorespiratory homeostatic and adaptive mechanisms in humans and the mechanisms of pathological processes leading to disease of the cardiorespiratory system and cardiorespiratory responses to exercise.</p> <p>Content includes normal anatomy and development of the cardiovascular and respiratory systems, electrophysiology of the heart, measurement and assessment of cardiac and respiratory function, the principles of physics relating to blood flow, respiration and cardiorespiratory investigations, the mechanisms of ventilation, gas exchange and oxygen carriage in the lungs, at the periphery and at a cellular level, acid-base homeostasis, mechanisms of action of endogenous messengers and drugs on the cardiac and respiratory systems, mechanisms of blood pressure control and its disturbance.</p>
Objectives:	<p>As a result of study in this subject, student's should understand:</p> <ul style="list-style-type: none"> # The structure, function and development of the heart including the processes involved in cardiac excitation - contraction coupling and the neural control of cardiac contraction. # The regulation of cardiac output and diseases that affect cardiac contractility. # The structure and function of blood vessels, regulation of blood flow and the processes involved in haemostasis and thrombo-embolic disease. # The regulation of blood pressure and the consequences and treatment of hypertension. # The process involved in arterial disease especially atherosclerosis. # The anatomy of the thorax and structure, function and development of the respiratory system including the mechanics of ventilation. # The process involved in gas exchange and how they may be disturbed by disease. # The process involved in the control of respiration including both neural and local factors # The principles of pharmacological treatment of cardio-respiratory disorders. # The relationships between structure and function in the cardiovascular and respiratory systems and how the process of oxygen transport is optimised # Adaptation of the cardiovascular system during dehydration, hyperthermia and the aging process

	<ul style="list-style-type: none"> # The genetic markers of exercise performance # The physiologic responses to endurance, sprint and strength training
Assessment:	Mid-semester quizzes (15%); problem-based learning tutor assessment (10%); end of semester examinations up to six hours (60%); and practical examination (15%).
Prescribed Texts:	None
Recommended Texts:	<p>Recommended Texts:</p> <ul style="list-style-type: none"> # Human Physiology (R Rhoades and R Pflanzner), 4th edn, Saunders, 2002 # Exercise Physiology: Theory and Application to Fitness and Performance (SK Powers), 6th edn, McGraw-Hill, 2006
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
Related Course(s):	Bachelor of Physiotherapy