

513-661 Applied Physiology

Credit Points 12.5

Semester 2

Prerequisites For Postgraduate Certificate – 513 699 Physiotherapy Professional Portfolio

Coordinator Ms Kim Miller

Contact 36 hours of lectures discussion and problem-based learning sessions

Non Contact Requirements Students will be expected to undertake a number of hours self directed learning in this subject. Approximately 100 hours of self directed learning is suggested.

Description This subject comprises 3 modules: Muscle and Exercise Physiology, Motor Skill Learning and Neurophysiology of Pain. The Muscle and Exercise Physiology module examines types of muscle action, fibre types, atrophy and hypertrophy, energy systems, muscle fatigue and recovery; while the exercise physiology component encompasses the response of body systems to exercise, and the influences of aging. The Motor Skill Learning module comprises The classification of motor skills, neural control of movement, motor control and learning theories, and principles of motor skill learning. The Neurophysiology of Pain module includes the study of pain receptors and neural pathways, pain perception, measurement of pain, the role of the autonomic nervous system and neuropathic pain.

Assessment Three written assignments of 2,000 words each (100%).

Prescribed Texts Nil

Subject Objectives

Generic Skills

On completion of this course, students will be expected to be able to demonstrate the following generic skills:

- An appreciation of the team approach to learning in complex areas.
- An appreciation of the need for intercultural sensitivity and understanding, particularly of different learning styles.
- An appreciation of the importance of, and development of, good written and verbal communication skills to articulate knowledge in applied physiology.
- The ability to evaluate and synthesise research and professional literature, and apply this information to novel situations

Specific Skills

On completion of this course students will be expected to be able to demonstrate the following specific skills:

- Acquire a sound theoretical knowledge of nervous system mechanisms of pain and the ability to apply this to clinical scenarios.
- Acquire a sound knowledge of assessment options for patients with pain.
- To analyse subjective and objective clinical data for its meaning with respect to pain mechanisms.
- Devise appropriate theoretical clinical management options for patients with pain
- Acquire a sound knowledge of the physiology of motor control.
- Acquire theoretical knowledge of the major motor control theories postulated in the literature.
- Analyse and critique key motor control theories and models.
- Acquire a thorough understanding of factors influencing learning including the learner and the environment, and how these factors can be applied clinical practice situations.
- Acquire sound theoretical knowledge of muscle physiology including muscle structure, mechanical properties, fibre types, neural activation, soreness, damage and adaptation, and the effects of ageing, immobil./spaceflight/disuse, training, fatigue and spasticity on muscle.
- Acquire theoretical knowledge of exercise physiology including exercise metabolism, cardio-respiratory response to exercise, energy, nutrition and environmental factors in exercise.
- Critically evaluate and synthesise research and professional literature relating to a chosen topic in the muscle/exercise physiology.