SPSC-513 Applied Physiology for Performance and Health
University of Nicosia, Cyprus

Course Code SPSC-513	**Course Title** Applied Physiology for Performance and Health	**ECTS Credits** 10
Department Life & Health Sciences	**Semester** Fall or Spring	**Prerequisites** None
Type of Course Elective	**Field** Sports Science	**Language of Instruction** Greek
Level of Course 2nd Cycle	**Year of Study** 1st or 2nd	**Lecturer(s)** Dr Marios Hadjicharalambous Dr George Aphamis
Mode of Delivery Face-to-face with support of electronic sources	**Work Placement** N/A	**Co-requisites** None

Objectives of the Course:

The main objectives of the course are to:

1. Understand the physiological characteristics and demands of various sports.
2. Understand the physiological characteristics of athletes who engage in serious training in various sports, with the objective of improving performance.
3. Study the response of physiological systems of the human body to various modes of training of different volume and intensity.
4. Study, recognize and understand etiology of fatigue.
5. Study and understand how to effectively use various means of exercise stimulus and adequate recovery in order to improve athletic performance.
6. Study and understand some aspects of youth sport, especially at elite level, as international competitions at world level are currently held in many sports.

Learning Outcomes:

After completion of the course students are expected to be able to:

1. Understand the responses of body systems (cardiovascular, muscular, respiratory, renal, gastrointestinal) to exercise.
2. Be aware of the physiological and metabolic demands of different sports.
3. Understand the physiological and metabolic adaptations to training and the physiological characteristics of elite sports performers.
4. Search and find suitable bibliography using selected keywords relevant to exercise physiology.
5. Recognize and assess strong and weak points of relevant journal papers.
6. Critically interpret data and text from studies on human physiology and metabolism.
7. Understand and interpret numerical data.

Course Contents:

1. Physiological adaptations to various types of strength training; improved strength performance following strength training.
2. Physiological adaptations to endurance training; improved performance following endurance training, lactate threshold, aerobic power, running economy.
3. Physiological adaptations to sprint training; improved performance following speed training, force-velocity relationships during maximal intensity exercise, speed of movement and performance in various sports.
4. Physiology of team sports.
5. Biochemical aspects of elite performance.
6. Anaerobic power, lactate production and tolerance, repeated sprints, aetiology of fatigue, physiological aspect of suitable regimes to increase lactic tolerance and improve athletic performance.
7. The endocrine system and hormonal responses at various exercise modes and intensities.
8. Specific characteristics of youth athletes and special physiological concerns when working with adolescent athletes.
9. Thermoregulation.
10. Exercise in the heat, response of the body's systems in the heat, recommendation of specific measures to optimize sport performance in a hot environment.
11. Exercise in cold environments, response of the body's systems in cold environments, recommendation of specific measures to optimize sport performance in cold environments.
12. Altitude training and its effects on athletic performance, specific concerns when training and competing at altitude.

Learning Activities and Teaching Methods

Lectures, Discussions, Presentations from students

Assessment Methods

Final examination, Coursework, Oral presentation

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN-13
Wilmore J. - Costill D	Φυσιολογία της Άσκησης και του Αθλητισμού - τόμος I	Ιατρικές Εκδόσεις Πασχαλίδης	2006	9603994162
Wilmore J. - Costill D	Φυσιολογία της Άσκησης και του Αθλητισμού - τόμος II	Ιατρικές Εκδόσεις Πασχαλίδης	2006	

Recommended Textbooks/Reading:				
Authors	**Title**	**Publisher**	**Year**	**ISBN**
Hargreaves, M. and Hawley, J. (Editors)	Physiological Bases of Sports Performance	McGraw-Hill Australia, Sydney	2003	ISBN-13 9780074711019
Maughan, R.J. & Gleeson, M.	The Biochemical Basis of Sports Performance	Oxford University Press, Oxford	2010	9780199208289
Hargreaves, M. and Spriet, L.L. (editors)	Exercise Metabolism. (2nd edition).	Human Kinetics, Champaign, IL.	2006	0736041036