Course Code	Course Title	ECTS Credits
SPSC-315	Exercise Physiology I	6
Department	**Semester**	**Prerequisites**
Sports Science	Fall	SPSC-105, SPSC-106
Type of Course	**Field**	**Language of Instruction**
Required	Science of Sports	Greek
Level of Course	**Year of Study**	**Lecturer**
1st Cycle	3rd	Dr Hadjicharalambous Marios
Mode of Delivery	**Work Placement**	**Co-requisites**
face-to-face	N/A	None
Recommended Optional Programme Components: N/A		

Objectives of the Course:

This course studies the responses of the major systems of the human body to exercise stimulus. Particular emphasis is given on the integrative nature of responses to exercise and environment. Cardiovascular, respiratory, neuromuscular, metabolic and thermal responses to various exercise intensities will be studied in some detail. In addition, the metabolic support of muscle function and the storage of fuels from daily food intake as well as the relationship among optimal nutrition, metabolic demanding and exercise performance will be addressed. All processes that help to delay the onset of fatigue and extend exercise capacity will be discussed.

Learning Outcomes:

By the end of the module you should be able to:

1. Demonstrate a detailed understanding of physiological systems relevant to exercise - muscle, cardiovascular, thermoregulation, respiratory-
2. Demonstrate a detailed understanding of the response of specific physiological systems to the challenge of exercise.
3. Demonstrate a detailed understanding of the integrative homeostatic responses made by the body in response to exercise.
4. Demonstrate a detailed understanding of the effects of use, disuse and training on muscle function and structure.
5. Demonstrate a detailed understanding of the physiological limitations to exercise performance.

Course Contents:

1. Nutrition as the base for human exercise performance.
2. Energy for physical activity (energy transfer in the body, energy transfer in exercise, measurement of human energy expenditure at rest and during exercise).
3. Systems of energy delivery and utilisation (Gas exchange and transport,

dynamics of pulmonary ventilation, functional capacity of the cardiovascular system).
4. Skeletal muscle functions during various exercise intensities.
5. Neural control of human movement during exercise.
6. The endocrine system and hormonal responses at various exercise intensities.
7. Training for aerobic and anaerobic power.
8. Training for muscular strength.
9. Exercise performance and environmental stress (exercise at medium and high altitude, exercise and thermal stress).
10. Central fatigue during exercise.
11. Exercise, body composition and weight control.
12. Exercise and health.

Learning Activities and Teaching Methods:

Lectures and practical demonstration

Assessment Methods:

Midterm examination, Final examination, Coursework, mini-review paper, Attendance and participation

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Willmore J. και D.L. Costill.	Φυσιολογία της Άσκησης και του Αθλητισμού	Ιατρικές Εκδόσεις Π.Χ. Πασχαλίδης, Αθηνα	2006	960-399-416-2

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Jack H. Wilmore, David L. Costill, W. Larry Kenney	Physiology of Sport and Exercise w/Web Study Guide-4th Edition	Human Kinetics, Inc.	2008	0736055835
McArdle Katch and Katch,	Exercise Physiology-Energy, Nutrition & Human Performance (6^{th} edition)	Lippincott, Williams & Wilkins.	2007	9780781749909 (ISSN) 0781749905
Powers, Scott and Edward Howley	Exercise Physiology: Theory and Application to Fitness and Performance : Exercise Physiology, 6/e	McGraw-Hill.	2007	0073028630
Roberts, RA and SJ. Keteyian	Fundamental Principles of Exercise Physiology, 2/e	McGraw Hill.	2003	ISBN: 0072462159
Per-Olof Astrand, Kaare Rodahl,	Textbook of Work Physiology:	Human Kinetics	2003	0736001409

Hans A. Dahl, Sigmund B. Stromme	Physiological Bases of Exercise			
Atko Viru, Mehis Viru	Biochemical Monitoring of Sport Training	Human Kinetics	2001	0736003487