Course Code	Course Title	ECTS Credits
SPSC-316	Exercise Physiology II	6
Department	**Semester**	**Prerequisites**
Sports Science	Spring	SPSC-315
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 lab course complements the Exercise Physiology I lecture course. Each student will undertake a series of 3hr practical in a variety of topics related to Exercise Physiology. Each topic will have an introductory 1hr lecture. The course has a major focus on the acute cardiorespiratory and haemodynamic response to exercise in the normal environment. Students will apply theory to practice through conduct of an endurance exercise training program with pre- and post-training assessments. The measures of maximal oxygen consumption and anaerobic threshold as determinants of cardiorespiratory performance in endurance events are discussed. In relation to these measures, the concept of acid-base balance is introduced. A quantitative approach in analysing the effects of exercise on plasma acid-base changes is examined.

Learning Outcomes:

By the end of the course the students should be able to:

1. Show a detailed understanding of a number of key physiological mechanisms operating during exercise.
2. Obtain sound physiological data during laboratory testing from human subjects.
3. Produce detailed laboratory reports.
4. Present and orally explain experimental research results

Course Contents:

1. Scaling of height and weight, using spreadsheets for data analysis
2. Power Lab tutorial and pulse rate recording
3. Blood pressure
4. Electrocardiograms
5. Electromyograms and grip force fatigue, lever arms and movement
6. Cardiovascular responses to onset of exercise.
7. Cardiorespiratory and perceptual responses during incremental exercise test.
8. VO2max and maximum heart rate testing using bicycle ergometer and power treadmill.
9. Data collection and analysis during exercise testing (heart rate, gas collection,

e.g. Douglas bags analysis etc.).
10. Maximum power output test.
11. Lactate threshold estimation using non-invasive methods (V-slope technique).
12. Lactate threshold estimation using invasive methods (capillary blood collection and direct analysis).
13. Preliminary group research proposals
14. Design and perform a basic group ergophysiology research project
15. Research project written report (individually)
16. Group oral presentations

Learning Activities and Teaching Methods:

Lectures, demonstration and some practical application from the students

Assessment Methods:

Combined value of mini-presentations, quizzes and mini lab reports, Individual paper, Group project oral presentation, Group project written report, attendance/participation

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Edward M. Winter; Andrew M. Jones; R.C. Richard Davison; Paul D. Bromley; Tom H. Mercer	Sport and Exercise Physiology Testing Guidelines: Volume I - Sport Testing The British Association of Sport and Exercise Sciences Guide	Routledge: Taylor & Francis	2007	978-0-415-36141-5
Christopher Carling, Thomas Reilly, A. Mark Williams	Performance Assessment for Field Sports	Routledge: Taylor and Francis	2008	978-0-415-42685-5

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Edward M. Winter, Andrew M. Jones, R.C. Richard Davison, Paul D. Bromley, Tom Mercer	Sport and Exercise Physiology Testing Guidelines: Volume II - Exercise and Clinical Testing	Routledge: Taylor & Francis	2007	978-0-415-37966-3
McArdle Katch and Katch,	Exercise Physiology-Energy, Nutrition & Human Performance (6^{th} edition)	Lippincott, Williams & Wilkins.	2007	9780781749909 0781749905
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 9780736055833
Powers, Scott and Edward Howley	Exercise Physiology: Theory & Application to Fitness & Performance: Exercise	McGraw-Hill.	2007	0073028630

	Physiology, 6/e			
Roberts, RA and SJ. Keteyian	Fundamental Principles of Exercise Physiology, 2/e	McGraw Hill.	2003	ISBN: 0072462159