# Global Learning Semesters
## Course Syllabus
Course: SPSC-215 Exercise Physiology II
Department: Liberal Arts
Host Institution: Intercollege, Nicosia, Cyprus

| Course Summary | | |
|---|---|---|
| **Course Code** | **Course Title** | **Recommended Credit Hours** |
| SPSC-215 | Exercise Physiology II | 3 |
| **Semester Offered** | **Contact Hours** | **Prerequisites** |
| Please contact us | 42-45 | SPSC-105, SPSC-106, SPSC-210 |
| **Department** | **Level of Course** | **Language of Instruction** |
| Liberal Arts | Lower Division | English |

## Course Description

This lab course complements the Exercise Physiology I lecture course. Each student will undertake a series of 4hr 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 cardio respiratory and homodynamic 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 cardio respiratory 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.

## Prerequisites

SPSC-105, SPSC-106, SPSC-210

## Topic Areas

1. Cardiovascular responses to onset of exercise.
2. Cardio respiratory and perceptual responses during incremental exercise test.
3. VO2max and maximum heart rate testing using bicycle ergo meter and power treadmill.
4. Data collection and analysis during exercise testing (heart rate, gas collection, Douglas bags analysis etc.).
5. Maximum power output test.
6. Lactate threshold estimation using non-invasive methods (V-slope technique).
7. Lactate threshold estimation using invasive methods (capillary blood collection and direct analysis).
8. Design and perform basic exercise physiology/ergo physiology tests.

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.

Assessment

Midterm Examination: (25%)

Final Examination: (40%)
Essay/Assignment: (25%)
Attendance/Participation: (10%)

Lab Exercises

1. Body composition assessment.
2. Blood pressures measurement at rest and during incremental exercise
3. Cardiovascular responses to onset of exercise.
4. Electrocardiography during exercise testing.
5. Cardio respiratory and perceptual responses during incremental exercise test.
6. VO2max and maximum heart rate testing using bicycle ergo meter and power treadmill.
7. Data collection and analysis during exercise testing (heart rate, gas collection, Douglas bags analysis etc.).
8. Maximum power output test.
9. Strength and anaerobic power.
10. Lactate threshold estimation using non-invasive methods (V-slope technique).
11. Lactate threshold estimation using invasive methods (capillary blood collection and direct analysis).
12. Design and perform basic exercise physiology/ergo physiology tests.

## Readings and Resources

**Required Textbooks**


1. Powers, Scott and Edward Howley 2004. Exercise Physiology: Theory and Application to Fitness and Performance. 5th ed. McGraw-Hill.
2. Astrand, P O & Rhodal, K. 1986. Textbook of Work Physiology: Physiological bases of exercise.
3. Foss, M L & Keteyian, S J. 1998. Physiological basis for Exercise and Sport. 6th ed.
4. McArdle W D, Katch F I & Katch V L. 2001. Exercise Physiology. 5th ed.
5. Wilmore, J H & Costill, D L. 1994. Physiology of Sport and Exercise.