

UNIVERSITY OF PUERTO RICO
MEDICAL SCIENCES CAMPUS
SCHOOL OF MEDICINE

PHYSIOLOGY DEPARTMENT

COURSE DESCRIPTION

COURSE TITLE: **ADVANCE EXERCISE PHYSIOLOGY II**

COURSE CODE: **FISA 8514**

CREDIT HOURS: **3 CREDITS (54 HOURS)**

COURSE DURATION: **18 WEEKS**

NUMBER OF STUDENTS: **MIN.: 3 MAX.: 10**

COORDINATOR NAME: **STAFF**

COORDINATOR OFFICE HOURS: **TO BE ARRANGED**

COORDINATOR OFFICE: **N/A**

COURSE HOURS: **TO BE ARRANGED (3.0 HRS. /WEEK)**

WHEN WILL BE OFFERED: ___ QUATERLY X SEMESTER
 ___ YEAR ___ SUMMER

PREREQUISITE: **FISA 8513 ADVANCE EXERCISE PHYSIOLOGY I**

COURSE JUSTIFICATION: **This course is a natural continuation of the previous experience obtained in Advance Exercise Physiology I. Contrary to the strong emphasis on basic science concepts in part I, this course highlights the application of exercise physiology**

in the spectrum of health-disease. Also it emphasizes applications of exercise physiology to exercise testing and evaluation.

COURSE DESCRIPTION: This course will review and discuss the latest research findings in exercise physiology/biochemistry related to: fatigue, aging, gender, children, environmental conditions and genetics. It will also review the measurement of endurance, anaerobic capacity, strength and body composition as well as applications of exercise physiology to exercise testing. The course consists of three sections: measurement of physiologic composition and capacities, special topics within exercise physiology, and exercise and health.

COURSE OBJECTIVES AND EXPECTED OUTCOMES:

- 1. Describe field and laboratory strategies for the evaluation of physiological capacities and body composition.**
- 2. Describe gender-related differences in exercise performance.**
- 3. Demonstrate knowledge in pediatric exercise physiology.**
- 4. Demonstrate knowledge regarding the acute and chronic adaptations to exercise in extreme environments.**
- 5. Describe the role of the genes in the response to exercise.**
- 6. Describe clinical criteria in the evaluation of exercise tolerance.**
- 7. Demonstrate knowledge in programming exercise training for health and fitness.**

The students should provide proficiency with the course objectives, that will be measured by analysis, integration and comparison of the above mentioned concepts, that will be evaluated through multiple choice questions, essay exams, term papers, presentations and/or publications.

COURSE TOPICS AND TIME DISTRIBUTION:

- Week 1. Measurements and evaluation of endurance**
- Week 2. Measurement and evaluation of anaerobic capacity and strength**
- Week 3. Measuring pulmonary function and ventilatory controls**
- Week 4. Estimation of body composition**
- Week 5. Exam #1**
- Week 6. Fatigue during exercise**
- Week 7. Gender, aging, and pediatric exercise performance**
- Week 8. Exercise in extreme environments**
- Week 9. Genetics of exercise performance**
- Week 10. Exam #2**
- Week 11. Exercise in health and disease I**
- Week 12. Exercise in health and disease I**
- Week 13. Evaluation of exercise tolerance**
- Week 14. Exercise programs for health and fitness**
- Week 15. Exam #3**
- Week 16. Presentations by students**
- Week 17. Presentations by students**
- Week 18. Presentations by students**

TEACHING STRATEGIES:

METHODS:

Lectures
Independent study
Group discussions

RESOURCES:

Power Point
Transparencies
Hand outs
Blackboard

ESSENTIAL REQUIREMENTS:

Attendance
Class Participation

EVALUATION STRATEGIES:

Paper presentations	30%
Exam I	20%
Exam II	20%
Exam III	20%
Class attendance and participation	<u>10%</u>
	100%

EVALUATION SYSTEM:

90-100 % = A
80-89 % = B
70-79 % = C
60-69 % = D
50-59 % = F

BIBLIOGRAFY:

- 1) Physiology 5th ed. (2004) Robert M. Berne et al., Mosby
- 2) Recent scientific articles to be selected by the instructor.

REASANOBLE ACCOMODATION STATEMENT:

STUDENTS WITH A HEALTH CONDITION OR SITUATION THAT, ACCORDING TO THE LAW, MAKES THEM ELIGIBLE FOR REASONABLE ACCOMMODATION HAVE THE RIGHT TO SUBMIT A WRITTEN APPLICATION TO THE PROFESSOR AND THE DEAN OF THEIR FACULTY, ACCORDING TO THE PROCEDURES ESTABLISHED IN THE DOCUMENT SUBMITTAL PROCESS FOR REASONABLE ACCOMMODATION OF THE MEDICAL SCIENCES CAMPUS. A FREE COPY OF THIS DOCUMENT MAY BE OBTAINED AT THE OFFICE OF THE DEAN FOR STUDENT AFFAIRS, SECOND FLOOR OF THE SCHOOL OF PHARMACY BUILDING; PHONE 787-758-2525 EXT. 5203. A COPY MAY ALSO BE OBTAINED AT THE OFFICE OF THE FACULTY DEANS AS WELL AS IN THE MSC WEB PAGE. THE APPLICATION DOES NOT EXEMPT THE STUDENT FROM COMPLYING WITH THE ACADEMIC REQUIREMENTS PERTAINING

TO THE PROGRAMS OF THE MEDICAL SCIENCES CAMPUS.

ACADEMIC INTEGRITY

The University of Puerto Rico promotes the highest standards of academic and scientific integrity. Article 6.2 of the UPR Student Bylaws (Certification JS 13 2009–2010) states that "academic dishonesty includes but is not limited to: fraudulent actions, obtaining grades or academic degrees using false or fraudulent simulations, copying totally or partially academic work from another person, plagiarizing totally or partially the work of another person, copying totally or partially responses from another person to examination questions, making another person to take any test, oral or written examination on his/hers behalf, as well as assisting or facilitating any person to incur in the aforementioned conduct". Fraudulent conduct refers to "behavior with the intent to defraud, including but not limited to, malicious alteration or falsification of grades, records, identification cards or other official documents of the UPR or any other institution." Any of these actions shall be subject to disciplinary sanctions in accordance with the disciplinary procedure, as stated in the existing UPR Student Bylaws.

DISCLAIMER: The above statement is an English translation, prepared at the Deanship of Academic Affairs of the Medical Sciences Campus, of certain parts of Article 6.2 of the UPR Student Bylaws "Reglamento General de Estudiantes de la Universidad de Puerto Rico", (Certificación JS 13 2009-2010). It is in no way intended to be a legal substitute for the original document, written in Spanish.