

UNIVERSITY OF PUERTO RICO
MEDICAL SCIENCES CAMPUS
SCHOOL OF MEDICINE

PHYSIOLOGY DEPARTMENT

COURSE DESCRIPTION

COURSE TITLE: **CARDIOVASCULAR PHYSIOLOGY**

COURSE CODE: **FISA 8512**

CREDIT HOURS: **2**

COURSE DURATION: **18 WEEKS**

NUMBER OF STUDENTS: **1-5**

COORDINATOR NAME: **GUIDO E. SANTACANA PH.D.**

COORDINATOR OFFICE HOURS: **TUESDAYS AND WENESDAYS FROM 1:00PM TO 3:00PM**

COORDINATOR OFFICE: **634-E**

COURSE HOURS: **TO BE ARRANGED**

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

PREREQUISITE: **FISA 8601 AND FISA 8602**

COURSE DESCRIPTION: **A COURSE ON COMPARATIVE CARDIOVASCULAR PHYSIOLOGY BASED ON SOME OF THE MOST RECENT ADVANCES IN THE**

FIELD. THE COURSE INCLUDES HEART MECHANICS, ELECTROPHYSIOLOGY, HEMODYNAMICS AND REGULATION.

COURSE OBJECTIVES AND EXPECTED OUTCOMES:

- 1. TO REVIEW THE BASICS CONCEPTS OF CARDIAC AND VASCULAR PHYSIOLOGY.**
- 2. TO SEARCH THE LITERATURE FOR THE MOST RECENT ADVANCES IN THE FOLLOWING SPECIFIC AREAS.**
 - A. THE HEART AS A MECHANICAL PUMP.**
 - B. STRUCTURAL FUNCTIONAL ORGANIZATION OF THE HEART.**
 - C. ELECTROPHYSIOLOGY OF THE FAST AND SLOW CARDIAC FIBERS.**
 - D. REGULATION OF CARDIAC MUSCLE PERFORMANCE.**
 - E. NEURAL AND HORMONAL CONTROL OF THE HEART.**
 - F. HEART HEMODYNAMICS**
 - G. THE PHYSIOLOGY OF HEART FAILURE.**
- 3. TO USE THE LITERATURE AS A MEANS TO DISCUSS EACH OF THE AFOREMENTIONED AREAS IN A PAPER DISCUSSION FORMAT.**
- 4. TO PREPARE A PAPER PRESENTATION FOR DISCUSSION WITH THE GROUP OR THE PROFESSOR.**

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:

- A. THE HEART AS A MECHANICAL PUMP.**
- B. STRUCTURAL FUNCTIONAL ORGANIZATION OF THE HEART.**
- C. ELECTROPHYSIOLOGY OF THE FAST AND SLOW CARDIAC FIBERS.**
- D. REGULATION OF CARDIAC MUSCLE PERFORMANCE.**
- E. NEURAL AND HORMONAL CONTROL OF THE HEART.**
- F. HEART HEMODYNAMICS.**
- G. THE PHYSIOLOGY OF HEART FAILURE.**

TEACHING STRATEGIES:

THE MAIN TEACHING STRATEGY FOR THIS COURSE IS ACTIVE GROUP DISCUSSION AND PAPER PRESENTATIONS.

ESSENTIAL REQUIREMENTS:

THE COURSE REQUIRES THAT THE STUDENT HAS ALREADY PASSED THE BASIC GRADUATE PHYSIOLOGY COURSE IN GOOD STANDING. CLASS ATTENDANCE IS ALSO REQUIRED.

EVALUATION STRATEGIES:

THE COURSE WILL BE EVALUATED THROUGH THE STUDENT PRESENTATIONS OF SPECIFIC ASSIGNED PAPERS.

EVALUATION SYSTEM:

**A 90-100 %
B 80-89 %
C 70-79 %
F <70 %**

BIBLIOGRAFY: RECENT ARTICLES FROM THE LITERATURE.

REASONABLE 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.