PHAR 5018
Cardiovascular Renal Respiratory Physiology and Therapeutics
Fall 2016

CLASS DAYS and TIME: Tuesday and Thursday 1:00-3:00 PM

CLASSROOM: Med. School Bldg. 229B

COURSE FACULTY:

Dr. Francis Lam, Course Director, 7-8319 (lamf@uthscsa.edu)
Dr. Jean Bopassa, 7-0429, 7-0334 (bopassa@uthscsa.edu)
Dr. Martin Paukert, 562-4052 (paukertm@uthscsa.edu)
Dr. Jason Pugh, 562-4040 (pughj@uthscsa.edu)

OFFICE LOCATION and HOURS: Dr. Lam: MCD 3.4, Greehey Campus. By appointment

EMAIL: See above

TELEPHONE: See above

READ THIS DOCUMENT CAREFULLY - YOU ARE RESPONSIBLE FOR ITS CONTENTS.

COURSE DESCRIPTION AND OBJECTIVES

Cardiovascular Renal Respiratory Physiology and Therapeutics is a 2.5-credit hour course that provides students with a base of knowledge in physiology and pharmacology taking an integrative approach to understanding experimental and clinical therapeutics. Primary focus will be on understanding normal physiologic functions, cellular mechanism underlying disease, and systematic consideration of the pharmacology, clinical applications, and toxicities of the major classes of drugs.

This elective 2.5 credit hour course is offered as an independent elective for students from other programs within the Graduate School of Biomedical Science.

Pre-requisites – INTD 5000 or at the discretion of the course director

Semester credit hours – 2.5

By the end of this course, each student should be able to:

- Describe and discuss the normal physiology of the cardiovascular system and mechanisms underlying its major pathologies such as atherosclerosis, hypertension, heart failure and stroke, as well as the major classes of drugs (e.g. antihypertensives, anti-lipemics, anti-anginals, and anticoagulants) to treat these primary cardiovascular disorders.
- Describe and discuss the importance of the kidneys in maintaining body electrolyte and water balance, and examples of cardiovascular and kidney diseases that are targets for important therapeutic drugs such as the diuretics and ACE inhibitors.
- Describe and discuss the respiratory physiology and drugs used in the treatment of asthma and chronic obstructive pulmonary disease.

- Describe and discuss the functional role and pharmacological modulation of the autonomic nervous system will be discussed within the context of the cardiovascular (e.g. vascular tone, heart rate) and respiratory (e.g. airway tone) systems.

COURSE ORGANIZATION

The main teaching modalities used in this course include:

1) Conventional didactic lectures, and 2) Student participation and presentation

Materials – Handouts and assigned readings by faculty, where appropriate

Computer Access – Assigned readings can be access online

Reading Assignments – As assigned by faculty

ATTENDANCE

Class attendance is expected. In addition, part of the course grade will be based on participation in class discussion.

TEXTBOOKS

Required: As assigned by faculty

Recommended: As assigned by faculty

GRADING POLICIES AND EXAMINATION PROCEDURES

The course will include at least one examination that, together with discussion participation, will be used to determine each student's overall course grade. The format of the examination will be at the discretion of the course faculty members.

Missed examination policy

Make-up examinations **may** be offered in case of emergencies at the discretion of the course director. A phone call (210-373-7412) or email to the course director is required. Failure to comply with the policies as outlined above will result in a score of 0 (zero) for the examination in question. If the student is allowed to take a make-up examination, it must be taken within one week of the original examination date. The format of make-up examination is at the discretion of the course director. The maximum percentage point obtainable on a make-up examination is 70%.

Grading System

The final course grade will be assigned according to the grading system within the Graduate School of Biomedical Science as follows:

A = 90-100% B = 80-89.9% C = 70-79.9% F = < 69.9%

REQUESTS FOR ACCOMODATIONS FOR DISABILITIES

In accordance with policy 4.2.3, **Request for Accommodation Under the ADA and the ADA Amendments Act of 2008 (ADAAA)**, any student requesting accommodation must submit the appropriate request for accommodation under the American with Disabilities Act (ADA, form 100). to his/her appropriate Associate

Dean of their School and a copy to the ADA Coordinator. Additional information may be obtained at http://uthscsa.edu/eeo/request.asp.

ACADEMIC INTEGRITY AND PROFESSIONALISM

Any student who commits an act of academic dishonesty is subject to discipline as prescribed by the UT System Rules and Regulations of the Board of Regents. Academic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an exam for another person, signing attendance sheets for another student, and any act designed to give unfair advantage to a student or the attempt to commit such an act. Additional information may be obtained at http://catalog.uthscsa.edu/generalinformation/generalacademicpolicies/academicdishonestypolicy/

TITLE IX AT UTHSCSA

Title IX Defined:
Title of the Education Amendments of 1972 is a federal law that prohibits sex discrimination in education. It reads "no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance."

University of Texas Health Science Center San Antonio's Commitment:
University of Texas Health Science Center San Antonio (UTHSCSA) is committed to maintaining a learning environment that is free from discriminatory conduct based on gender. As required by Title IX, UTHSCSA does not discriminate on the basis of sex in its education programs and activities, and it encourages any student, faculty, or staff member who thinks that he or she has been subjected to sex discrimination, sexual harassment (including sexual violence) or sexual misconduct to immediately report the incident to the Title IX Director.

In an emergency, victims of sexual abuse should call 911. For non-emergencies, they may contact UPD at 210-567-2800. Additional information may be obtained at http://students.uthscsa.edu/titleix/

EMAIL POLICY

Every student is issued a University e-mail address and account at the time of enrollment. As a matter of University Policy, communications between students and faculty that occur using the student's University e-mail address is considered official business. Therefore, students are expected to check their university email inboxes on a regular basis so that any announcements, instructions, or information regarding this course will be received in a timely way. Missed communications due to inadequate monitoring of incoming emails on the University's email server will never be a valid excuse for unsatisfactory academic progress.

USE OF RECORDING DEVICES

Recording of lectures and other learning activities in this course by any means (e.g., video, audio, etc.) is only permitted if approved by the instructor or required for compliance with Americans with Disabilities Act (ADA).

ELECTRONIC DEVICES

Cell phones must be turned off during all class meetings and exams. Computers and electronic tablets are

allowed only for participating in classroom activities (e.g., viewing slides presented in lecture or conference materials). No texting, tweeting, emailing, web-surfing, gaming, or any use of electronic devices that is not directly connected with classroom activities is permitted.

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TENTATIVE Fall 2016 CLASS SCHEDULE
Tusday and Thursday 1:00 to 3:00 PM

WEEK	DATE	TOPIC	Instructor
Week 1	8/9/16	CV System Overview	Bopassa
	8/11/16	Concept of Sufficient Blood Flow – The Fick Principle	Bopassa
Week 2	8/16/16	Cardiac Electrophysiology/Cardiac Cycle	Bopassa
	8/18/16	Control of Cardiac Output	Bopassa
Week 3	8/23/16	Regulation of Coronary Blood Flow	Bopassa
	8/25/16	Pharmacological Management: Cardiac Arrhythmias (Primarily Atrial Fibrillation), Angina Pectoris, Heart Failure	Lam
Week 4	8/30/16	Peripheral Vascular Control & Blood Pressure Regulation	Bopassa
	9/1/16	Neural mechanisms in Cardiovascular Regulation	Bopassa
Week 5	9/6/16	Integrative CV Function During Exercise & Hemorrhage	Bopassa
	9/8/16	Urinary System Overview	Pugh
Week 6	9/13/16	Glomerular Filtration & Renal Blood Flow Regulation	Pugh
	9/15/16	Transport of Na+ and Cl^-/Transport of Acids/Bases	Pugh
Week 7	9/20/16	Integration of Salt and Water Balance	Pugh
	9/22/16	Arterial Hypertension: Consensus, Controversy and Pharmacological Management	Bopassa / Pugh/Lam
Week 8	9/27/16	Respiratory System Overview	Paukert
	9/29/16	Review/Catch up/Self-Study	**Lam**
Week 9	10/4/16	Ventilation & Perfusion of the Lungs /O_2 & CO_2 Transport in Blood	Paukert
	10/6/16	Pharmacological Management of Asthma	Lam
Week 10	10/11/16	Pulmonary Gas Exchange/Respiratory Control of Acid/Base Balance	Paukert
	10/13/16	Respiratory Rhythmogenesis and Neural Control of Respiration	Paukert