

SYLLABUS**PHA6935****SYSTEMS PHYSIOLOGY AND PATHOPHYSIOLOGY – I****3 Credit Hours****Fall 2020****OBJECTIVES**

Systems Physiology and Pathophysiology-I is the first of a two-course sequence that aims to provide graduate students in the Department of Pharmacodynamics with an integrated knowledge base in the physiological functions of the human body and pathological changes pertinent to the development and progression of various diseases. As an integral component of the Ph. D. curriculum, the two courses will provide students with a solid understanding of human pathophysiology in preparation for their dissertation research. Specifically, upon completion of the sequence, students should be able to:

1. Understand physiological processes at the molecular, cellular, organ and system level;
2. Understand mechanisms responsible for the control and coordination of various functions;
3. Understand the integration of the organ systems in maintaining homeostasis;
4. Understand the mechanisms of disease initiation, progression and sequela;
5. Recognize the signs and symptoms of major disease states or processes; and
6. Demonstrate familiarity with normal and abnormal values of physiological variables.

FACULTY

Instructors	Office	Email
Dr. Jason Frazier	MSB-P2-29	frazier@cop.ufl.edu
Dr. Maureen Keller-Wood	HPNP-4332A	kellerwd@cop.ufl.edu
Dr. Jenny Wilkerson	MSB-P6-31	jenny.wilkerson@cop.ufl.edu
Dr. Bin Liu	MSB-P2-31	liu@cop.ufl.edu
Dr. Janel Soucie	Orlando Campus	jsoucie@cop.ufl.edu

Course Coordinator: Dr. Bin Liu

COURSE FORMAT

The course consists of multiple components:

- (a) Lecture videos of PHA5560, Pathophysiology and Patient Assessment-I
- (b) Interactive sessions with instructors
- (c) Assignments from instructors

COURSE MATERIALS

Course materials include lecture videos, slides, and reading assignments.

The recommended textbook for the course will be: **Pathophysiology of Disease: An Introduction to Clinical Medicine, 6e**; Stephen J. McPhee, Gary D. Hammer.

Faculty may also provide review chapters or articles and research papers to the students for each of the weekly discussion sessions.

ATTENDANCE POLICY

Students are required to watch all lecture videos and attend all interactive sessions.

EVALUATION OF PERFORMANCE

Grades will be based on performance on the essay exams that are based on materials covered in the lectures, discussion sessions and additional assignments from the instructors and the participation of the discussion session. The point breakdown is as follows.

	Module	Points
Exams		360
Discussion sessions		40
	Total:	400

	Module	Instructor	Content	Points
Exam 1	Module 1	Dr. Frazier	Lectures & Discussion	100
Exam 2	Module 2	Dr. Keller-Wood	Lectures & Discussion	100
Exam 3	Module 3	Dr. Wilkerson	Lectures & Discussion	80
	Module 4	Dr. Soucie	Lectures	40
	Module 4	Dr. Liu	Lectures & Discussion	40
		Total:		360

	Module	Instructor	Content	Points
	Module 1	Dr. Frazier	Lectures & Discussion	10
	Module 2	Dr. Keller-Wood	Lectures & Discussion	10
	Module 3	Dr. Wilkerson	Lectures & Discussion	10
	Module 4	Dr. Liu	Lectures & Discussion	10
		Total:		40

Makeup for missing an exam/required activity

When an emergency/occasion arises that may make it impossible for a student to take a regularly scheduled exam or attend a pre-schedule activity, inform the course coordinator and the relevant instructor at the earliest possible time. Afterwards, follow through with the course coordinator and the relevant instructor to discuss and set up the makeups.

Grading Scale

Percent Grade	Letter Grade	GPA
≥ 93.0%	A	4.00
90.0% - 92.9%	A ⁻	3.67
87.0% - 89.9%	B ⁺	3.33
83.0% - 86.9%	B	3.00
80.0% - 82.9%	B ⁻	2.67
77.0% - 79.9%	C ⁺	2.33
73.0% - 76.9%	C	2.00
70.0% - 72.9%	C ⁻	1.67
67.0% - 69.9%	D ⁺	1.33
63.0% - 66.9%	D	1.00
60.0% - 62.9%	D ⁻	0.67
< 60.0%	E	0.00

PROFESSIONAL CONDUCT

Students are expected to adhere to the University of Florida Honor Code “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity”. Academic dishonest will result in earning a failing grade (i.e., E) for the entire course and additional consequences dictated by University of Florida code of conduct.

Appendix A: Schedule

Date	Time	Lecture Topic	Instructor
Module 1: Cell Signaling, Neural Biology & Muscle Pathophysiology			
08/31-09/04		Cell membranes Receptors and 2 nd Messengers Resting Membrane Potential & Action Potential	Dr. Frazier Dr. Frazier Dr. Frazier
09/07-09/11		Autonomic Nervous System Skeletal Muscle Smooth and Cardiac Muscle	Dr. Frazier Dr. Frazier Dr. Frazier
09/14-09/18		Muscle Pathophysiology	Dr. Frazier
09/18 (Fri)	TBD	Discussion (2 hr)	Dr. Frazier
09/21 (Mon)	3-5 pm	Exam 1 (2 hr, Room P2-20)	
Module 2: Cardiovascular Physiology & Pathophysiology			
09/22-09/25		Intro to Cardiovascular Pathophysiology Control of the Heart: I & II I: The cardiac cycle and valve disease II: Heart rate	Dr. Keller-Wood Dr. Keller- Wood
09/28-10/02		Control of the Heart: III-V III: Arrhythmias IV: Stroke volume and contractility V: Cardiomyopathy Control of the Vasculature: I-III I: Review of vascular tone II: Reflex control (part 1) III: Reflex control (part 2)	Dr. Keller-Wood Dr. Keller-Wood
10/05-10/09		Vasculature: IV-VI IV: Autoregulation* IV: Atherosclerosis V: Cardiac Ischemia VI: edema	Dr. Keller-Wood
10/11-10/16		Compensations for exercise & disease	Dr. Keller-Wood
10/16	TBD	Discussion (2 hr)	Dr. Keller-Wood
10/19 (Mon)	3-5 pm	Exam 1 (2 hr, Room P2-20)	

Module 3: Renal Physiology & Pathophysiology

10/20-10/23		Renal Anatomy & Nephron Segment Function, Parts I & II Assessment of Renal Function	Dr. Wilkerson Dr. Wilkerson
10/26-10/30		Water and Sodium Homeostasis & Hyponatremia, Hypernatremia & Polyuria Parts I-II Regulation of Potassium & Regulation of Acid-Base Physiology, Parts I & II	Dr. Wilkerson Dr. Wilkerson
11/02-11/06		Acute/Chronic Renal Failure	Dr. Wilkerson
11/06	TBD	Discussion (2 hr)	Dr. Wilkerson

Module 4: Respiratory Physiology & Pathophysiology

11/09-11/13		Respiratory Pathophysiology, Pulmonary Function Tests Obstructive Lung Disease	Dr. Soucie
11/16-11/20		Restrictive Lung Disease, Pulmonary Embolism Cancer Biology and Metastasis Lung Cancer	Dr. Soucie Dr. Liu Dr. Liu
11/23 (Fri)	TBD	Discussion (2 hr)	Dr. Liu
12/04 (Mon)	3-5 pm	Exam 3 (Room P2-20)	