

# PHA5560 Pathophysiology and Patient Assessment I

Fall, 2020

3 Credit Hours – [A-E Grading]

*Pathophysiology and Patient Assessment I course is the first of a two-course sequence that provides students with an integrated knowledge base in the physiological functions of the human body to prepare students for the understanding of pathological changes pertinent to the development and progression of various diseases. Key concepts will be reinforced through the application of learned knowledge to problem solving in the simulated patient assessment modules built into the course sequence. Interpretation of pathophysiology and patient assessment data is a critical step in the patient care process. It is prerequisite to identifying medication-related problems and developing a prioritized problem list and this will be learned in depth in future courses.*

## Teaching Partnership Leaders

Lihui Yuan, Pharm.D., Ph.D.

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- Office: P2-33
- Phone: 352-294-8594

Office Hours: Please see the Canvas course site for posted office hours.

*See Appendix A. for Course Directory of Faculty and Staff Contact Information.*

## Entrustable Professional Activities

This course will prepare you to perform the following activities which the public entrusts a Pharmacist to perform:

1. EPA A1. Gather patient information (subjective and objective data).
2. EPA A2. Interpret patient data, and identify medication-related problems and develop a prioritized problem list.

## Course-Level Objectives

Upon completion of this course, the student will be able to:

1. Discuss the primary tenets of cell theory, ion channels, equilibrium potentials, and the resting membrane potential.
2. Explain the ionic basis of the action potential in various types of excitable cells.
3. Explain primary neuromuscular functions and related diseases.
4. Cover basic anatomy and physiology of the autonomic nervous system.
5. Explain neural, endocrine and local mechanisms involved in regulation of cardiac and vascular function
6. Explain relationship of cardiovascular disease to underlying pathophysiology of

- valves, cardiac conduction, cardiac performance or vascular dysfunction.
7. Explain renal mechanisms controlling water and sodium homeostasis
  8. Apply knowledge of renal function to explain the pathophysiology involving fluid and electrolyte imbalances that accompany acute and chronic renal dysfunction
  9. Explain mechanisms of control of respiration
  10. Applies mechanics of respiration in patient assessment: volume, pressure, airflow in respiratory cycle
  11. Establish a basic understanding of tumorigenesis, metastasis and diagnosis
  12. Discuss the impact of pulmonary tumors on respiratory functions
  13. Interpret and evaluate patient assessment findings related to the following body systems:
    - a. Plasma/cell-membrane
    - b. Cardiovascular
    - c. Renal
    - d. Pulmonary

## Course Pre-requisites

1. Principles of Patient-Centered Care

## Course Co-requisites

1. There are no co-requisites for this course.

## Course Outline

See Appendix. Please routinely check your campus calendar and the Canvas course site for any messages about changes in the schedule including meeting dates/times, deadlines, and room changes.

## Required Textbooks/Readings

1. Text 1: Nemire R, Kier K, Assa-Eley MT. Pharmacy Student Survival Guide. 3rd Edition. McGraw-Hill, (Chapter 11 – Interpretation of Clinical Laboratory Data).
  - Available via Access Pharmacy:  
<https://accesspharmacy.mhmedical.com/Book.aspx?bookid=1593>

Use [UF VPN to access UF Libraries Resources](#) when off-campus.

The UF HSC library staff can assist you with questions or issues related to accessing online library materials. For assistance contact your College of Pharmacy librarian or visit the [HSC Library Website](#) at this URL:<http://www.library.health.ufl.edu/>

## Suggested Textbooks/Readings

Suggested readings will be posted on Canvas.

## Other Required Learning Resources

N/A

## Materials & Supplies Fees

None

## Student Evaluation & Grading

Evaluation Methods and How Grades are calculated.

[The Canvas® gradebook will be set-up using the percentages below to compute the grade.]

Assessment Item	Grade Percentage
Individual Readiness Assurance Tests (4 @ 2% each)	8%
Quizzes (4 @ 3% each)	12%
Exam 1	22.5%
Exam 2	22.5%
Exam 3 (Comprehensive)	35%
<b>Total</b>	<b>100%</b>

Table 1.1 Evaluation and Grading Above

Table 1.2 grading scale

Percentage	Letter Grade
92.50-100%	A
89.50-92.49%	A-
86.50-89.49%	B+
82.50-86.49%	B
79.50-82.49%	B-
76.50-79.49%	C+
72.50-76.49%	C
69.50-72.49%	C-
66.50-69.49%	D+
62.50-66.49%	D
59.50-62.49%	D-
< 59.50%	E

### Rounding of grades:

Final grades in Canvas will be rounded to the 2nd decimal place. If the decimal is X.495 or higher, Canvas will round the grade to X.50. The above scale depicts this policy and grades are determined accordingly. Grade assignment is made using this policy and **NO EXCEPTIONS** will be made in situations where a student's grade is "close."

## Makeup Assignments

Makeup assignments may be required for excused absences from all Active Learning Sessions. Students will be required to complete the makeup assignment within one week of the missed session.

## Educational Technology Use

The following technology below will be used during the course and the student must have the appropriate technology and software.

1. ExamSoft™ Testing Platform
2. Canvas™ Learning Management System

For technical support, navigate to [Educational Technology and IT Support Contact Information](#) at this URL: <http://curriculum.pharmacy.ufl.edu/current-students/technical-help/>

## Pharm.D. Course Policies

The Policies in the following link apply to this course. Review the General [Pharm.D. Course Policies](#) carefully, at this URL: <http://curriculum.pharmacy.ufl.edu/current-students/course-policies/>

## Course Evaluation Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

# Appendix A. Course Directory

## Teaching Partnership Leader/Course Director(s):

Lihui Yuan, Pharm.D., Ph.D.

- Email: [yuanlh@cop.ufl.edu](mailto:yuanlh@cop.ufl.edu)
- Office: P2-33
- Phone: 352-294-8594

Office Hours: Please see the Canvas course site for posted office hours.

### Questions to Ask:

- Concerns about performance
- Guidance when there are performance problems (failing grades)
- General questions about content

## Other Teaching Partnership Faculty Members:

Jason Frazier, Ph.D.

- Email: [frazier@cop.ufl.edu](mailto:frazier@cop.ufl.edu)
- Office: MSB P2-29
- Phone: 352-273-7686

Maureen Keller-Wood, Ph.D.

- Email: [kellerwd@cop.ufl.edu](mailto:kellerwd@cop.ufl.edu)
- Office: HPNP 4332, Room A
- Phone: 352-273-7687

Jenny Wilkerson, Ph.D.

- Email: [eWilkerson@cop.ufl.edu](mailto:eWilkerson@cop.ufl.edu)
- Office: MSB P2-27
- Phone: 352-273-6977

Bin Liu, Ph.D.

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- Office: MSB P2-31
- Phone: 352-273-7747

Janel Soucie, Pharm.D.

- Email: [jsoucie@cop.ufl.edu](mailto:jsoucie@cop.ufl.edu)
- Office: Orlando Campus
- Phone: 407-313-7054

Adonice Khoury, PharmD, BCPS

- Email: [akhoury@cop.ufl.edu](mailto:akhoury@cop.ufl.edu)
- Phone: 352-273-8136

Thakul Rattanasuwan, PharmD

- Email: [t.rattanasuwan@cop.ufl.edu](mailto:t.rattanasuwan@cop.ufl.edu)

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## Instructional Designer:

Name: Holly Fremen

- Email: [holly.fremen@cop.ufl.edu](mailto:holly.fremen@cop.ufl.edu)
- Office: HPNP 4309
- Phone: 352-273-5558

## Academic Coordinator Gainesville Campus:

Name: Nicole Marlowe

- Email: [nicolemarlowe@cop.ufl.edu](mailto:nicolemarlowe@cop.ufl.edu)
- Office: HPNP 4312
- Phone: 352-273-6523

Absence/Tardy Email: [absent1pd@cop.ufl.edu](mailto:absent1pd@cop.ufl.edu) (Visit the [course policy site](#) for further instructions)

## Educational Coordinators

Name: McKenzie Wallen

- Email: [mwallen@cop.ufl.edu](mailto:mwallen@cop.ufl.edu)
- Office: Jacksonville Campus

Name: Iverta Allen

- Email: [iallen1@cop.ufl.edu](mailto:iallen1@cop.ufl.edu)
- Office: Orlando Campus

### Questions to Ask:

- Issues related to course policies (absences, make up exams, missed attendance)
- Absence/tardy requests (Only the Academic Coordinator handles absence requests)
- Questions about dates, deadlines, meeting place
- Availability of handouts and other course materials
- Assignment directions
- Questions about grade entries in gradebook (missing grades, incorrect grade)
- Assistance with ExamSoft® (Distance campus students may contact the Educational
- Coordinator for use of Examplify and assistance during exams. The Academic Coordinator is the contact person for issues related to grading and posting of ExamSoft grades.

## Appendix: Course Outline

Dates for Independent Study	Mod#	Activity	Activity Title	[min]	Obj	Responsible
9/21/20	1A	Module	Module 1A: Introduction to the Course; Review of Cell Function and Membrane Structure		(1-3)	Charles Jason Frazier, Lihui Yuan
9/21/20		Video Lecture	Watch: Introduction to PPAI Course	30		Lihui Yuan
9/21/20		Quiz Self-Assessment	Course Introduction Quiz			Lihui Yuan
9/21/20		Video Lecture	Watch: An Introduction to Patient Assessment	30		Lihui Yuan
9/21/20	Lecture A Series	Video Lecture	Watch: Cell Membranes	60		Charles Jason Frazier
9/22/20	Lecture B Series	Video Lecture	Watch: Receptors and 2nd Messengers	90		Charles Jason Frazier
9/23/20	Lecture C Series	Video Lecture	Watch: Resting Membrane Potential & Action Potential	120		Charles Jason Frazier
<b>09/24/20 at 9:30am - 10:30am</b>	<b>1A</b>	<b>Active Learning Session--VC</b>	<b>Required Attendance: , Quiz 1 (covers lectures A-C)</b>	<b>60</b>	<b>1-3</b>	<b>Charles Jason Frazier, Lihui Yuan</b>
9/24/20		Quiz In-class Graded	Quiz 1			Charles Jason Frazier, Lihui Yuan
9/25/20	1B	Module	Module 1B: Autonomic Nervous System, Muscle Function & Pathophysiology		(1-2, 4)	Charles Jason Frazier, Lihui Yuan
9/25/20	Lecture D Series	Video Lecture	Watch: Autonomic Nervous System	90		Charles Jason Frazier
9/28/20	Lecture E Series	Video Lecture	Watch: Skeletal Muscle	90		Charles Jason Frazier
9/29/20	Lecture F Series	Video Lecture	Watch: Smooth and Cardiac Muscle	90		Charles Jason Frazier
9/30/20	Lecture G Series	Video Lecture	Watch: Muscle Pathophysiology	60		Charles Jason Frazier
9/30/20	Prep for ALS	Video Lecture	Watch: Interpretation of Clinical Laboratory Data: Electrolytes and Blood Chemistry	30		Lihui Yuan
<b>10/01/20 at 8:30am - 10:25am</b>	<b>1B</b>	<b>Active Learning Session--VC</b>	<b>Active Learning Session 1: The Pathophysiology of Cell Function &amp; Electrolytes in Patient Assessment</b>	<b>120</b>	<b>13</b>	<b>Charles Jason Frazier, Lihui Yuan</b>

			<b>-Module 1A/1B iRAT -TBL</b>			
10/01/20		Quiz In-class Graded	iRAT1			Charles Jason Frazier, Lihui Yuan
<b>10/06/20 at 2:00pm - 4:00pm</b>	<b>1A - 1B</b>	<b>Exam</b>	<b>Exam 1: Module 1</b>	<b>120</b>		<b>Lihui Yuan</b>
10/07/20	2A	Module	Module 2A: Cardiovascular Pathophysiology		(4-5)	Maureen Keller-Wood
10/07/20	Lecture A	Video Lecture	Watch: Introduction to Cardiovascular Pathophysiology	60		Maureen Keller-Wood
10/08/20	Lecture B-F	Video Lecture	Watch: Control of the Heart, Parts I-V I: The cardiac cycle and valve disease II: Heart rate III: Arrhythmias IV: Stroke volume V: Cardiomyopathy	180		Maureen Keller-Wood
10/09/20	Lecture G-I	Video Lecture	Watch: Control of the Vasculature, Parts I-III I: review of vascular tone II: reflex control (part 1) II: reflex control (part 2) III: autoregulation	90		Maureen Keller-Wood
<b>10/13/20 at 2:00pm - 3:00pm</b>	<b>2A</b>	<b>Active Learning Session--VC</b>	<b>Required Attendance: Trial quiz with discussion (45 min), then Quiz 2 (15min, Material covered: Lecture A through I autoregulation)</b>	<b>60</b>		<b>Lihui Yuan, Maureen Keller-Wood</b>
10/13/20		Quiz In-class Graded	Quiz 2			Lihui Yuan, Maureen Keller-Wood
10/14/20	2B	Module	Module 2B: Cardiovascular Pathophysiology, Continued		(4-5)	Maureen Keller-Wood
10/14/20	Lecture J-L	Video Lecture	Watch: Vascular, Parts IV-VI IV: Atherosclerosis V: Cardiac Ischemia VI: Edema	120		Maureen Keller-Wood
10/16/20	Lecture M	Video Lecture	Watch: Compensations for exercise and disease	45		Maureen Keller-Wood
10/19/20	Prep for ALS	Video Lecture	Watch: Introduction to Cardiac Enzymes and other markers of cardiovascular Health	30		Lihui Yuan



10/20/20 8:30am - 10:25am	2A - 2B	Active Learning Session--VC	Active Learning Session 2: The Pathophysiology of the Cardiovascular System and Cardiovascular Markers in Patient Assessment -iRAT2 -TBL	120	13	Lihui Yuan, Maureen Keller-Wood
10/20/20		Quiz In-class Graded	iRAT2			Lihui Yuan, Maureen Keller-Wood
10/23/20 (2-3 PM via zoom)	2A - 2B	Active Learning Session--Web	Zoom Conferences: Q&A Session (recommended attendance)			Maureen Keller-Wood
10/27/20 at 2:00pm - 4:00pm	2A - 2B	Exam	Exam 2: Module 2	120		Lihui Yuan
10/28/20	3	Module	Module 3: Renal Pathophysiology		(4-8)	Jenny Wilkerson
10/28/20	3.1 - 3.2	Video Lecture	Watch: Renal Anatomy & Nephron Segment Function, Parts I-II	120		Jenny Wilkerson
10/30/20	3.3	Video Lecture	Watch: Assessment of Renal Function	60		Jenny Wilkerson
11/01/20	3.4-3.5	Video Lecture	Watch: Water and Sodium Homeostasis & Hyponatremia, Hypernatremia, and Polyuria, Parts I-II	120		Jenny Wilkerson
11/03/20	3.6-3.7	Video Lecture	Watch: Regulation of Potassium & Regulation of Acid-Base Physiology, Parts I-II	90		Jenny Wilkerson
11/05/20	3.8	Video Lecture	Watch: Acute/Chronic Renal Failure	60		Jenny Wilkerson
11/06/20 2:00pm - 3:00pm	3	Active Learning Session--VC	Required Attendance: Quiz 3 ( Material covered: 3.1-3.5)	60		Jenny Wilkerson, Lihui Yuan
11/06/20		Quiz In-class Graded	Quiz 3			Jenny Wilkerson, Lihui Yuan
11/09/20	Prep for ALS	Video Lecture	Watch: Introduction to markers of Renal System Health	15		Thakul Rattanasuwan
11/10/20 8:30am - 10:25am	3	Active Learning Session--VC	Active Learning Session 3: Pathophysiology of the Renal System and Markers of Renal Function in Patient Assessment	120	13	Adonice Khoury, Jenny Wilkerson, Lihui Yuan, Thakul Rattanasuwan

			<b>-iRAT3 -TBL</b>			
11/10/20		Quiz In-class Graded	iRAT3			Jenny Wilkerson, Lihui Yuan, Thakul Rattanasuwan
11/12/20	4	Module	Module 4: Respiration Pathophysiology		(9-12)	Bin Liu, Janel Soucie
11/12/20	4.1-4.4	Video Lecture	Watch: Overview of Respiratory Physiology, Pulmonary Function Tests, Obstructive Lung Disease, and Restrictive Lung Disease and Pulmonary Embolism	240		Janel Soucie
11/16/20	4.5-4.8	Video Lecture	Watch: Cancer Biology and Metastasis	90		Bin Liu
11/16/20	4.9	Video Lecture	Watch: Lung Cancer	30		Bin Liu
<b>11/17/20 at 8:30am - 9:30am</b>	<b>3</b>	<b>Active Learning Session--VC</b>	<b>Required Attendance: Quiz 4 (Material covered: 4.1-4.9)</b>	<b>60</b>		<b>Bin Liu, Janel Soucie, Lihui Yuan</b>
11/17/20		Quiz In-class Graded	Quiz 4			Bin Liu, Janel Soucie, Lihui Yuan
11/18/20	Prep for ALS	Video Lecture	Skills lab I course Mod: Patient Assessment: The Respiratory System	30		Eric Free Egelund
<b>11/19/20 at 10:40am - 12:35pm</b>	<b>4</b>	<b>Active Learning Session--VC</b>	<b>Active Learning Session 4: The Pathophysiology of the Respiratory System and Markers of Respiratory Function in Patient Assessment -iRAT4 -TBL</b>	<b>120</b>	<b>13</b>	<b>Bin Liu, Janel Soucie, Lihui Yuan</b>
11/19/20		Quiz In-class Graded	iRAT4			Bin Liu, Janel Soucie, Lihui Yuan
<b>11/24/20 8:30am - 10:30am</b>	<b>1-4</b>	<b>Exam</b>	<b>Exam 3: Modules 1-4 (Comprehensive)</b>			<b>Lihui Yuan</b>
				3030		Total Minutes
				<b>50.5</b>		<b>Total Hours</b>