

PHA5561 Pathophysiology and Patient Assessment II

Spring 2024

3 Credit Hours – [A-E Grading]

The Pathophysiology and Patient Assessment II course is the second 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. Corollary to the establishment of a solid understanding of human pathophysiology, 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.

Teaching Partnership Leader

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

- Email: yuanlh@cop.ufl.edu
- 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:

Patient Care Provider Domain

1. Collect information to identify a patient's medication-related problems and health-related needs.
 - ST1.1 Collect a medical history from a patient or caregiver.
2. Analyze information to determine the effects of medication therapy, identify medication-related problems, and prioritize health-related needs.
 - 2.1. Assess a patient's signs and symptoms to determine whether the patient can be treated within the scope of practice or requires a referral
 - ST2.2. Measure an adult patient's vital signs and interpret the results (e.g., body temperature, pulse rate, respiration rate, and blood pressure)
 - ST2.3. Interpret laboratory test results

Course-Level Objectives

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

1. Explain renal mechanisms controlling water and sodium homeostasis
2. Apply knowledge of renal function to explain the pathophysiology involving fluid and electrolyte imbalances that accompany acute and chronic renal dysfunction
3. Explain mechanisms of control of respiration
4. Apply mechanics of respiration in patient assessment: volume, pressure, airflow in respiratory cycle
5. Establish a basic understanding of tumorigenesis, metastasis and diagnosis
6. Discuss the impact of pulmonary tumors on respiratory functions
7. Describe the endocrine control of: male and female reproduction and growth
8. Describe endocrine control of glucose, lipid, thyroid hormone and calcium homeostasis.
9. Understand the pathophysiology of glucose and lipid metabolism in types of diabetes.
10. Describe the endocrine factors contributing to regulation of appetite and satiety
11. Describe how the gastrointestinal system functions and the pathophysiology of common gastrointestinal disorders related to disruption of motility, absorption or secretion.
12. Describe the physical signs and lab values that represent the physiological changes that occur in the following systems which are discussed during this course:
 - a. Renal
 - b. Pulmonary
 - c. Endocrine
 - d. Gastroenterological
13. Collaborate as a team member and solve a problem/case that requires interpretation of pathophysiological findings including lab values, patient assessment findings, and diagnostic procedure results.

Course Pre-requisites

1. PHA5560: Pathophysiology and Patient Assessment I
2. PHA5103: Principles of Patient-Centered Care

Required Textbooks/Readings

Nemire R, Kier K, Assa-Eley MT. Pharmacy Student Survival Guide. 4th Edition. McGraw-Hill, (Chapter 10 – Interpretation of Clinical Laboratory Data).

- Available via HSC Library – Access Pharmacy
 - <https://accesspharmacy.mhmedical.com/Book.aspx?bookid=3269>

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](http://www.library.health.ufl.edu/) at this URL: <http://www.library.health.ufl.edu/>

Suggested Textbooks/Readings

Suggested reading materials will be posted in the Canvas site.

Other Required Learning Resources

None

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
iRATs [4 @ 2% each]	8%
tRATs [4 @ 3% each]	12%
Quizzes (4 @2.5% each)	10%
Exam 1	25%
Exam 2	20%
Exam 3	25%
Total	100%

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."

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/>

Artificial Intelligence Use

The use of artificial intelligence (AI) text generators such as ChatGPT on assignments, projects, quizzes, and exams is prohibited in this course. Use of AI text generators is considered evidence of academic dishonesty. If a student is uncertain about the use of AI technology, it is the student's responsibility to ask the instructor prior to beginning the assignment or assessment.

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/>

Attendance Policy

Attendance is mandatory for active learning sessions such as team-based learning sessions, case discussions, laboratory sessions, and other activities that the instructor designates as required. This

course has 8 required sessions. A student who misses greater than 2 sessions for this course (greater than 25% of the required active learning sessions) will receive an incomplete in the course and will retake the course during the next offering, resulting in delayed graduation.

Late Assignments

N/A

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.

Accessibility and Belonging Statement

The University of Florida College of Pharmacy strives to stimulate a culture that promotes diversity and inclusion within an exceptional community of students, faculty, and staff. It is our intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit.

We intend to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let us know ways to improve the course's effectiveness for you personally or for other students or student groups.

If any of our class meetings conflict with any of your religious events, an excused absence will be provided when requested using the standard UF COP process as detailed in the [UF COP Course policies](#).

If you feel that you have experienced or witnessed any bias/treatment that falls short of these expectations, you may submit a report through the UF [COP Student Mistreatment Report](#).

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:

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

Email: yuanlh@cop.ufl.edu

Office: P2-33

Phone: 352-294-8594

Questions to Ask:

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

Instructional Designer:

- Name: Kimberly Heal
- Email: kheal@ufl.edu
- Office: HPNP 4309
- Phone: 352-273-5558

Academic Coordinator Gainesville Campus:

Name: Ashley Williams

- Email: acwilliams@ufl.edu
- Office: HPNP 4312
- Phone: 352-273-5617

Absence/Tardy Email: (Visit the course policy site for further instructions)

Educational Coordinators

Name: Katie Orben

- Email: korben06@ufl.edu
- Office: Jacksonville Campus
- Phone: 904-244-9590

Name: Jessica Linares

- Email: jnoriegalinares@ufl.edu
- Office: Orlando Campus
- Phone: 407-313-4087

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Other Teaching Partnership Faculty Members:

Erin Bruce, Ph.D.

Ebruce5@ufl.edu

(352)294-8626

Adonice Khoury, Pharm.D., BCPS

akhoury@cop.ufl.edu

(352) 273-8136

Jason Powell, PharmD

jpdrams@ufl.edu

(352) 265-7015

Maddalena Prafati

mparafati@ufl.edu

(352) 294-8940

Janel Soucie, Pharm.D.

jsoucie@cop.ufl.edu

(407) 313-7054

Fan Zhang, Ph.D.

fzhang1@ufl.edu

(352) 294-8287

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Student Dates of Recommended study	Mod#	Activity	Unit Topic	Contact Hours	Syllabus Learning Objectives	Responsible
	1	Module	Module 1: Renal Pathophysiology		1-2, 12-13	Adonice Khoury, Lihui Yuan
01/02/24	1.1	Video Lecture	Watch: Anatomy of the Kidney and Nephron with Emphasis on Glomerular Filtration	1		Lihui Yuan
01/02/24	1.2	Video Lecture	Watch: Nephron Segment: Mechanisms of Water and Sodium Reabsorption	1		Lihui Yuan
01/03/24	1.3	Video Lecture	Watch: Assessment of Renal Function. Osmotic Pressure, and Body Water Distribution	1		Lihui Yuan
01/03/24	1.4	Video Lecture	Watch: Endocrine Systems Regulating Water and Sodium Homeostasis	1		Lihui Yuan
01/04/24	1.5	Video Lecture	Watch: Disorders of Water and Sodium Homeostasis: Hyponatremia, Hypernatremia, and Polyuria	1		Lihui Yuan
01/04/24	1.6	Video Lecture	Watch: Renal Regulation of Potassium	1		Lihui Yuan
01/05/24	1.7	Video Lecture	Watch: Renal Regulation of Acid-Base Physiology: emphasis on Metabolic Alkalosis and Metabolic Acidosis	1		Lihui Yuan
01/05/24	1.8	Video Lecture	Watch: Renal Pathophysiology:	1		Lihui Yuan

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			Acute and Chronic Kidney Failure			
01/08/24	Prep for ALS	Video Lecture	Watch: Introduction to markers of Renal System Health	0.5		<u>Adonice Khoury</u>
01/09/24 10:00am-11:50am	1	Active Learning Session-VC	Active Learning Session 1: Pathophysiology of the Renal System and Markers of Renal Function in Patient Assessment -iRAT and tRAT 1 -TBL	2	12-13	Adonice Khoury, Lihui Yuan
01/09/24		Quiz In-class Graded	iRAT and tRAT 1			Adonice Khoury, Lihui Yuan
01/12/24 1:00pm-1:50pm	1	Active Learning Session-VC	Required Attendance: Topic discussion (45 min), then Quiz 1 (15 min, Material covered: 1.1-1.8)	1		Lihui Yuan
01/12/24 1:00pm-1:50pm		Quiz In-class Graded	Quiz 1			Lihui Yuan
	2	Module	Module 2: Respiration Pathophysiology			Fan Zhang, Janel Soucie
01/12/24	2.1	Video Lecture	Watch: Overview of Respiratory Pathophysiology	1		Janel Soucie
01/12/24	2.2	Video Lecture	Watch: Pulmonary Function Tests	1		Janel Soucie
01/16/24	2.3	Video Lecture	Watch: Obstructive Lung Disease	1		Janel Soucie
01/16/24	2.4	Video Lecture	Restrictive Lung Disease and Pulmonary Embolism	1		Janel Soucie
01/17/24	2.5-2.10	Video Lecture	Watch: Cancer Biology and Metastasis, Lung cancer	2		Fan Zhang

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01/17/24	Prep for ALS	Video Lecture	Watch: Skills lab I Module: Patient Assessment: The Respiratory System	0.5		Lihui Yuan
01/18/24 10:00am-11:50am	2	Active Learning Session-VC	Active Learning Session 2: The Pathophysiology of the Respiratory System and Markers of Respiratory Function in Patient Assessment -iRAT and tRAT 2 -TBL	2	12-13	Fan Zhang, Janel Soucie, Lihui Yuan
01/18/24		Quiz In-class Graded	iRAT and tRAT 2			Fan Zhang, Janel Soucie, Lihui Yuan
01/23/24 9:00am-9:50am	2	Active Learning Session-VC	Required Attendance: Quiz 2 (Material covered: 2.1-2.10)	1		Fan Zhang, Janel Soucie, Lihui Yuan
01/23/24 9:00am-9:50am		Quiz In-class Graded	Quiz 2			Fan Zhang, Janel Soucie, Lihui Yuan
01/25/24 10:00am-12:00pm	1-2	Exam	Exam 1:			Adonice Khoury, Fan Zhang, Janel Soucie, Lihui Yuan
	3	Module	Module 3: Endocrine System	0	7-9, 12-13	Jason Powell, Lihui Yuan, Maddalena Parafati
01/25/24	3.1	Video Lecture	Watch: Principles of Endocrinology, Part 1	0.5		Lihui Yuan
01/26/24	3.2	Video Lecture	Watch: Principles of Endocrinology, Part 2	0.75		Lihui Yuan

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01/29/24	3.3	Video Lecture	Watch: Male Reproduction	0.75		Maddalena Parafati
01/29/24	3.4	Video Lecture	Watch: Female Reproduction, Part 1	1		Maddalena Parafati
01/30/24	3.5	Video Lecture	Watch: Female Reproduction, Part 2	0.75		Maddalena Parafati
01/31/24	3.6	Video Lecture	Watch: Bone Growth and Calcium Homeostasis	1		Jason Powell
02/01/24	3.7	Video Lecture	Watch: Thyroid Pathophysiology	1		Jason Powell
02/02/24	3.8	Video Lecture	Watch: Glucose and Lipid Metabolism, part 1	1		Lihui Yuan
02/02/24	3.9	Video Lecture	Watch: Glucose and Lipid Metabolism, part 2	1		Lihui Yuan
02/02/24 9:00-9:30am			Exam Review			
02/05/24	3.10	Video Lecture	Watch: Diabetes Overview, part 1	1		Lihui Yuan
02/05/24	3.11	Video Lecture	Watch: Diabetes Overview, part 2	1		Lihui Yuan
02/06/24	3	ALS Prep	Watch ALS Prep: Markers of Endocrine Health	0.5		Lihui Yuan
02/07/24 1:00pm- 2:50pm	3	Active Learning Session-VC	Active Learning Session 3: Endocrine System *iRAT/tRAT 3 *Patient Assessment	2	12-13	Jason Powell, Lihui Yuan
02/07/24		Quiz In-class Graded	iRAT/tRAT 3			Jason Powell, Lihui Yuan
02/09/24 9:00am- 9:50am	3	Active Learning Session-VC	Required Attendance: Quiz 3 (15 min, covers lectures 3.1 to 3.11); Discussion (45 min)	1		Lihui Yuan, Jason Powell, Maddalena Parafati

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02/09/24 9:00am- 9:50am		Quiz In- class Graded	Quiz 3			Jason Powell, Maddalena Parafati, Lihui Yuan
02/14/24 10:00am- 12:00pm	3	Exam	Exam 2: Module 3			
	4	Module	Module 4: Gastrointestinal (GI) System		10-13	Lihui Yuan, Erin Bruce, Kimberly Stultz
02/09/24	4.1	Video Lecture	Watch: Intro to GI Disorders	1		Erin Bruce
02/12/24	4.2	Video Lecture	Watch: Esophageal Disorders	0.5		Erin Bruce
02/12/24	4.3	Video Lecture	Watch: Gastric Disorders	1		Erin Bruce
02/14/24	4.4	Video Lecture	Watch: Liver Disorders	1		Erin Bruce
02/15/24	4.5	Video Lecture	Watch: Pancreas Disorders	1		Erin Bruce
02/15/24	4.6	Video Lecture	Watch: Small Intestinal Disorders	0.75		Erin Bruce
02/16/24	4.7	Video Lecture	Watch: Large Intestine Disorders	1		Erin Bruce
02/16/24	4.8	Video Lecture	Watch: Regulation of Food Intake and Obesity	1		Erin Bruce
02/19/24	4	ALS Prep	Watch ALS Prep: GI and Liver Function Assessment	0.5		Lihui Yuan
02/20/24 8:00am- 9:50am	4	Active Learning Session- -VC	Active Learning Session 4: Gastrointestinal System *iRAT/tRAT 4 *Patient Assessment	2	12-13	Lihui Yuan, Erin Bruce
02/20/24	4	Quiz In- class Graded	iRAT/tRAT 4			Lihui Yuan, Erin Bruce
02/22/24 9:00am- 9:50am	4	Active Learning	Required Attendance: Quiz 4 (15 min, covers	1		Lihui Yuan, Erin Bruce

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		Session- -VC	lectures 4.1 to 4.8); Discussion (45 min)			
02/22/24 9:00am- 9:50am		Quiz In- class Graded	Quiz 4			Lihui Yuan, Erin Bruce
02/22/24 3:30pm			Exam Review			
02/22/24			Course Evaluations			
02/27/24 10:00am- 12:00pm	All	Exam	Exam 3: Modules 1- 4			
03/06/24 10:00am			Exam Review			
			Total Hours	48.5		