

*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.*

**Course Prerequisites:** -- PHA5560: Pathophysiology and Patient Assessment I

**Course Corequisites:** -- PHA5103: Principles of Patient-Centered Care

Course Faculty and Staff	
Course Director	Instructional Designer
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[Faculty and Staff: Who to Contact and Questions to Ask](#)

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

**Faculty Locations:**

<b>Gainesville</b>	PEP: HPNP 2336 CSP: MSB P1-20 PC: P-320
<b>Orlando</b>	UFRAC 420

## Course Objectives and Educational Outcomes

<b>Course Objectives</b> Upon completion of this course, the student will be able to:	<b>Linked Educational Outcome</b>
1. Explain renal mechanisms controlling water and sodium homeostasis.	Learner
2. Apply knowledge of renal function to explain the pathophysiology involving fluid and electrolyte imbalances that accompany acute and chronic renal dysfunction.	Provider
3. Explain mechanisms of control of respiration.	Learner
4. Apply mechanics of respiration in patient assessment: volume, pressure, airflow in respiratory cycle.	Provider
5. Establish a basic understanding of tumorigenesis, metastasis and diagnosis.	Learner
6. Discuss the impact of pulmonary tumors on respiratory functions.	Provider
7. Describe the endocrine control of: <ul style="list-style-type: none"> <li>a. male and female reproduction and growth.</li> <li>b. glucose, lipid, thyroid hormone and calcium homeostasis.</li> </ul>	Learner Provider
8. Understand the pathophysiology of glucose and lipid metabolism in types of diabetes.	Learner Provider
9. Describe the endocrine factors contributing to regulation of appetite and satiety	Learner
10. Describe how the gastrointestinal system functions and the pathophysiology of common gastrointestinal disorders related to disruption of motility, absorption or secretion.	Provider
11. Describe the physical signs and lab values that represent the physiological changes that occur in the following systems which are discussed during this course: <ul style="list-style-type: none"> <li>a. Renal</li> <li>b. Pulmonary</li> <li>c. Endocrine</li> <li>d. Gastroenterological</li> </ul>	Provider
12. 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.	Provider Communicator

## Course Resources and Fees

### Course Outline

See Appendix A. Please routinely check your Google 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

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/>

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>

### Suggested Textbooks/Readings

Suggested reading materials will be posted in the Canvas site.
<b>Other Required Learning Resources</b>
None
<b>Materials &amp; Supplies Fees</b>
None

Evaluation and Grading	
<b>Student Evaluation &amp; Grading</b>	
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%
<b>Total</b>	<b>100%</b>

Grading Scale					
Percentage	Letter Grade	Percentage	Letter Grade	Percentage	Letter Grade
92.50-100%	A	79.50-82.49%	B-	66.50-69.49%	D+
89.50-92.49%	A-	76.50-79.49%	C+	62.50-66.49%	D
86.50-89.49%	B+	72.50-76.49%	C	59.50-62.49%	D-
82.50-86.49%	B	69.50-72.49%	C-	< 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 <u>NO EXCEPTIONS</u> will be made in situations where a student’s grade is “close.”
University of Florida Honor Pledge and Academic Dishonesty
UF students are bound by The Honor Pledge which states “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.”
The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Expectations for Artificial Intelligence and when use constitutes academic dishonesty is outlined below.
Tendering information (giving your work to another to be copied, giving someone answers to assessment questions, informing another person in a later section about the questions that appear on an assessment that you have taken, or giving or selling a paper to another student), is considered academic dishonesty.
If you have any questions or concerns, please consult the course’s Teaching Partnership Leader/Course Director or Assistant Dean for Curricular Affairs.

See the [UF Conduct Code website](#) for more information. If you have any questions or concerns, please consult with the instructor or TAs in this class.

## Assignment Descriptions

There are no assignments for this course.

## Course-Related Policies

### UF Resources and Policies

University of Florida resources and policies can be found at this URL: <https://go.ufl.edu/syllabuspolicies>

### PharmD 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 session(s) for this course will receive an incomplete in the course and will retake the course during the next offering, resulting in delayed graduation.

### 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.

### Late Assignments

There are no assignments in this course.

### 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 (AI) Use for Assessments

**The use of generative AI in assessments is prohibited**, unless explicitly allowed by the course instructor. Assessments include any submitted work, graded or ungraded, that will be evaluated. These include, but are not limited to, quizzes, exams, assignments, writing projects, etc. 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.

When authorized by the course director/course instructors, students may use AI technologies in the completion of an assessment if they acknowledge all use by naming the technology, describing how it was employed, and adhering to any other requirement stipulated in the assessment's instructions. Failure to acknowledge the use of AI technology or disregarding instructions related to the use of AI for assessments is considered academic misconduct. Students must disclose the use of AI and AI-assisted technologies by following the instructions below.

Application of AI technology must be done with human oversight and control, and students should carefully review and edit the result, as AI can generate outputs that can be incorrect, incomplete, or biased. **Students assume full responsibility for all content, including errors and omissions, if AI is employed.** Additionally, privacy is a concern with AI-generated content. Most commercially available AI systems are not compliant with [HIPAA](#) or FERPA protections, inputting patient or student information is prohibited by federal law.

## Course-Related Policies

Instructions to acknowledge the use of AI:

Statement: During the preparation of this assignment I/we, [INSERT NAME/S], used [INSERT TOOL / SERVICE] in order to [INSERT REASON OR PURPOSE]. After using this tool/service, I/we reviewed and edited the content as needed and take full responsibility for the content of the submission.

### **Penalties for unauthorized use:**

**Unauthorized use of AI text generators for assessments is considered evidence of academic dishonesty (see [policy on academic dishonesty](#)).**

### **Guidance on Using AI Tools for Learning**

You are welcome to use AI tools to support your learning in this course, including for tasks such as brainstorming, outlining, or summarizing complex topics. However, please be aware that AI-generated content may contain false or misleading information. It is your responsibility to critically evaluate and fact-check any information you use. For all assessments, your responses should be based on the content provided in course materials and lectures.

To protect instructional content and comply with university policies, if you choose to create your own study aids using AI, instructor materials (e.g., PowerPoint slides, lecture transcripts, course handouts) may only be uploaded to university-supported, secure platforms such as the Navigator suite of AI tools (<https://it.ufl.edu/ai/>) or Microsoft Copilot (<https://copilot.microsoft.com/>) using your GatorLink credentials. When using Navigator AI, students should select a model approved for handling sensitive data. Individual instructors may choose not to permit the use of their instructional materials with AI tools. Any course materials that are restricted from AI use will be communicated to students through the course learning management system, Canvas.

Students are prohibited from uploading instructor materials to open or non-university-supported AI tools unless they have received written permission from the course instructor. Students are expected to use AI tools responsibly and must not upload any content that violates copyright laws or terms of use. If you are unsure whether an AI tool is appropriate to use, please consult the instructor.

### **Disability Resource Center**

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See the [Get Started with the DRC webpage](#) on the Disability Resource Center site. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### **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. Students can complete evaluations in three ways:

1. The email they receive from GatorEvals,
2. Their Canvas course menu under GatorEvals, or
3. The central portal at <https://my-ufl.bluera.com>

Guidance on how to provide constructive feedback is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>

## Appendix A: Course Outline

Date / Time [Recommended for Independent Study]	Mod#	Activity	Activity Title	Contact (min)	Responsible
	1	Module	Module 1: Renal Pathophysiology (Objectives 4-8)		Khoury, Yuan
01/05/26		Video Other	Course intro video	6	Yuan
01/05/26	1.1	Video Lecture	Watch: Anatomy of the Kidney and Nephron with Emphasis on Glomerular Filtration	47	Yuan
01/05/26	1.2	Video Lecture	Watch: Nephron Segment: Mechanisms of Water and Sodium Reabsorption	48	Yuan
01/06/26	1.3	Video Lecture	Watch: Assessment of Renal Function. Osmotic Pressure, and Body Water Distribution	46	Yuan
01/06/26	1.4	Video Lecture	Watch: Endocrine Systems Regulating Water and Sodium Homeostasis	51	Yuan
01/06/26	1.5	Video Lecture	Watch: Disorders of Water and Sodium Homeostasis: Hyponatremia, Hypernatremia, and Polyuria	47	Yuan
01/06/26	1.6	Video Lecture	Watch: Renal Regulation of Potassium	30	Yuan
01/07/26	1.7	Video Lecture	Watch: Renal Regulation of Acid-Base Physiology: emphasis on Metabolic Alkalosis and Metabolic Acidosis	50	Yuan
01/07/26	1.8	Video Lecture	Watch: Renal Pathophysiology: Acute and Chronic Kidney Failure	43	Yuan
01/07/26	Prep for ALS	Video Lecture	Watch: Introduction to markers of Renal System Health	33	Khoury
<b>01/08/2026 at 10:00am - 11:50am</b>	<b>1</b>	<b>Active Learning Session-- VC</b>	<b>Active Learning Session 1: Pathophysiology of the Renal System and Markers of Renal Function in Patient Assessment (Objectives 12-13) -iRAT and tRAT 1 -TBL</b>	<b>100</b>	<b>Khoury, Yuan</b>
		Quiz In- class Graded	iRAT and tRAT 1 (Module 1)		Khoury, Yuan
<b>01/13/2026 at 11:00am - 11:50am</b>	<b>1</b>	<b>Active Learning Session-- VC</b>	<b>Required Attendance: Topic discussion (35 min), then Quiz (15 min, Material covered: 1.1-1.8)</b>	<b>50</b>	<b>Yuan</b>
		Quiz In- class Graded	Quiz 1		Yuan
	2	Module	Module 2: Respiration Pathophysiology (Objectives 9-12)		Zhang, Soucie

01/14/26	2.1	Video Lecture	Watch: Overview of Respiratory Pathophysiology	40	Soucie
01/14/26	2.2	Video Lecture	Watch: Pulmonary Function Tests	56	Soucie
01/15/26	2.3	Video Lecture	Watch: Obstructive Lung Disease	58	Soucie
01/15/26	2.4	Video Lecture	Restrictive Lung Disease and Pulmonary Embolism	56	Soucie
01/16/26	2.5	Video Lecture	Watch: Cancer Statistics	12	Zhang
01/20/26	2.6	Video Lecture	Watch: Cell Growth Regulation and Dysregulation	42	Zhang
01/20/26	2.7	Video Lecture	Watch: 2.7: Tumor Characteristics	26	Zhang
01/21/26	2.8	Video Lecture	Watch: Cancer Metastasis	13	Zhang
01/21/26	2.9	Video Lecture	Watch: Cancer Diagnosis and Treatment	28	Zhang
01/22/26	2.10	Video Lecture	Watch: Lung Cancer-	22	Zhang
<b>01/22/2026 at 3:00pm - 4:50pm</b>	<b>2</b>	<b>Active Learning Session--VC</b>	<b>Active Learning Session 2: The Pathophysiology of the Respiratory System and Markers of Respiratory Function in Patient Assessment (Objectives 12-13) -iRAT and tRAT 2 -TBL</b>	<b>100</b>	<b>Zhang, Soucie, Yuan</b>
		Quiz In-class Graded	iRAT and tRAT 2		Zhang, Soucie, Yuan
<b>01/27/2026 at 10:0am - 10:50am</b>	<b>2</b>	<b>Active Learning Session--VC</b>	<b>Required Attendance: Topic discussion (35 min), then Quiz (15 min, Material covered: 2.1-2.10)</b>	<b>50</b>	<b>Zhang, Soucie, Yuan</b>
		Quiz In-class Graded	Quiz 2		Zhang, Soucie, Yuan
<b>02/03/2026 at 1:00pm - 3:00pm</b>	<b>1-2</b>	<b>Exam</b>	<b>Exam 1: Modules 1-2</b>	<b>120</b>	<b>Khoury, Zhang, Soucie, Yuan</b>
	<b>3</b>	<b>Module</b>	<b>Module 3: Endocrine System (Objectives 7-9, 12-13)</b>		<b>Bruce, Powell, Yuan</b>
02/04/26	3.1	Video Lecture	Watch: Principles of Endocrinology, Part 1	36	Yuan
02/04/26	3.2	Video Lecture	Watch: Principles of Endocrinology, Part 2	30	Yuan
02/04/26	3.3	Video Lecture	Watch: Male Reproduction	39	Bruce

02/05/26	3.4	Video Lecture	Watch: Female Reproduction, Part 1	46	Bruce
02/05/26	3.5	Video Lecture	Watch: Female Reproduction, Part 2	51	Bruce
02/05/26	3.6	Video Lecture	Watch: Bone Growth and Calcium Homeostasis	52	Powell
02/06/26	3.7	Video Lecture	Watch: Thyroid Pathophysiology	42	Powell
02/06/26	3.8	Video Lecture	Watch: Glucose and Lipid Metabolism, part 1	47	Yuan
02/06/26	3.9	Video Lecture	Watch: Glucose and Lipid Metabolism, part 2	43	Yuan
02/09/26	3.10	Video Lecture	Watch: Diabetes Overview, part 1	41	Yuan
02/09/26	3.11	Video Lecture	Watch: Diabetes Overview, part 2	49	Yuan
02/09/26	3	ALS Prep	Watch ALS Prep: Markers of Endocrine Health	23	Yuan
<b>02/10/2026 at 10:00am - 11:50am</b>	<b>3</b>	<b>Active Learning Session--VC</b>	<b>Active Learning Session 3: Endocrine System (Objectives 12-13) *iRAT/tRAT 3 *Patient Assessment</b>	<b>100</b>	<b>Powell, Yuan</b>
		Quiz In-class Graded	iRAT/tRAT 3		Powell, Yuan
<b>02/12/2026 at 10:00am - 10:50am</b>	<b>3</b>	<b>Active Learning Session--VC</b>	<b>Required Attendance: Topic discussion (35 min), then Quiz (15 min, Material covered:3.1-3.11)</b>	<b>50</b>	<b>Bruce, Powell, Yuan</b>
		Quiz In-class Graded	Quiz 3		Bruce, Powell, Yuan
<b>02/13/2026 at 1:00pm - 3:00pm</b>	<b>3</b>	<b>Exam</b>	<b>Exam 2: Module 3</b>	<b>120</b>	
	4	Module	Module 4: Gastrointestinal (GI) System (Objectives 3, 11-12)		Bruce, Yuan
02/16/26	4.1	Video Lecture	Watch: Intro to GI Disorders	37	Bruce
02/16/26	4.2	Video Lecture	Watch: Esophageal Disorders	26	Bruce
02/16/26	4.3	Video Lecture	Watch: Gastric Disorders	37	Bruce
02/17/26	4.4	Video Lecture	Watch: Liver Disorders	38	Bruce
02/17/26	4.5	Video Lecture	Watch: Pancreas Disorders	37	Bruce
02/17/26	4.6	Video Lecture	Watch: Small Intestinal Disorders	29	Bruce

02/18/26	4.7	Video Lecture	Watch: Large Intestine Disorders	30	Bruce
02/18/26	4.8	Video Lecture	Watch: Regulation of Food Intake and Obesity	47	Bruce
02/19/26	4	ALS Prep	Watch ALS Prep: GI and Liver Function Assessment	20	Yuan
<b>02/20/2026 at 1:00pm - 2:50pm</b>	<b>4</b>	<b>Active Learning Session--VC</b>	<b>Active Learning Session 4: Gastrointestinal System (Objectives 12-13) *iRAT/tRAT 4 *Patient Assessment</b>	<b>100</b>	<b>Bruce, Yuan</b>
	4	Quiz In-class Graded	iRAT/tRAT 4		Bruce, Yuan
<b>02/26/2026 11:00am - 11:50am</b>	<b>4</b>	<b>Active Learning Session--VC</b>	<b>Required Attendance: Topic discussion (35 min), then Quiz (15 min, Material covered:4.1-4.8)</b>	<b>50</b>	<b>Bruce, Yuan</b>
		Quiz In-class Graded	Quiz 4		Bruce, Yuan
<b>02/26/2026 at 11:50am - 12:10pm</b>		<b>Course Evaluation</b>	<b>Course Evaluations</b>		
<b>03/05/2026 at 9:00am – 11:00am</b>	<b>All</b>	<b>Exam</b>	<b>Exam 3: Modules 1-4</b>		
			Total min	2476	
			Total Contact hours	<b>47.88</b>	