

**Pathophysiology II**  
**PHRD 4035**  
**CRN# 61108**

**I. Contact Information**

**Course Coordinator:**

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**Course Instructors:**

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\*Preferred Method of Communication

**II. Course Pre-requisites/Co-requisites**

Pre-requisites - PHRD 4012

**III. Course Description**

Pathophysiology II (3 Cr): Students will be introduced to disease processes at the organ/system level. This course will serve as an extension to Pathophysiology I. Complete organ systems are introduced and the impact of diseases on these systems is studied.

**IV. Curricular Objectives and Outcomes**

**Domain 1 – Foundational Knowledge**

**1.1. Learner (Learner)** - Develop, integrate, and apply knowledge from the foundational sciences (i.e., *pharmaceutical, social/behavioral/administrative*, and *clinical sciences*) to evaluate the scientific literature, explain drug action, solve therapeutic problems, and advance population health and *patient-centered care*.

## ACPE APPENDIX 1

### **Pathology/Pathophysiology**

Basic principles, mechanisms, functional changes and metabolic sequelae of human disease impacting cells, organs, and systems.

### **Human Physiology**

Homeostatic function and normal response reactions across the lifespan of non-diseased human cells, organs, and systems.

## **V. Course Specific Objectives and Outcomes**

The constant objective for the course is to introduce the student to basic principles of the ways that medications work in the body. Additionally some time will be spent introducing how to select certain medications for certain patients. At the end of this course, the student should be able to: Predict physiological reactions to numerous challenges at a cellular, organ, and system level; utilize information to explain the pathological basis of disease.

## **VI. Course Topics**

Pathophysiology and pharmacology of immunology disorders, renal and urinary disorders, pulmonary disease, endocrine disorders, reproductive system diseases and cancer biology.

## **VII. Instructional Methods and Activities**

Instructional methods may include: traditional lectures, in-class discussion, small group discussions, problem-based learning, and individual projects or assignments. Clicker questions are commonly used to quiz students on difficult concepts to gauge understanding of the material.

## **VIII. Evaluation and Grade Assignment**

There will be three exams and a final exam. The final exam will not be comprehensive. Each 50-minute class period will be represented by 10 points on the exam.

**Exam 1:** 80 points

**Exam 2:** 100 points

**Exam 3:** 90 points

**Final exam:** 110 points

**Total points for the course:** 380 points\*

\*Quizzes/assignments will be given as deemed necessary by each faculty member. The points available from these quizzes and assignments will be added into the denominator for the total number of points available from the course, and course grade determined accordingly. All exam and assignment grades will be given to the students within five business days.

- Exam dates are scheduled in the course syllabus and will only be changed in the event of University closure.
- Exams may be multiple-choice, fill-in-the-blank, short-answer, case- or scenario-based discussion, essay, or any other format deemed necessary by the faculty members and Course Coordinators. The final exam will be exclusively multiple-choice.
- Normal laboratory values will be provided for all questions, unless otherwise specified during class. Lab values that are specific to a disease state will generally not be provided.
- Information acquired from previous portions of the course and from other courses in the professional pharmacy curriculum may be needed in preparing for these examinations.
- Exams may cover material (readings, outside assignments) not covered in class.
- Exams will NOT be returned to the student. All instructors will have copies of the exam and students' results, and students may view their exam results in instructors' offices, at times convenient for all involved. At this time, they may also discuss exam questions with the instructors who wrote them; however, any official "challenges" of questions must be done in writing. (See below)
- Exams will be issued using Exam Soft; all students are required to download the exams prior to the date of the scheduled exam. If a student cannot take the exam on the scheduled date the student must reverse download the exam to Exam Soft. Under no circumstances should a student open an examination, except during the scheduled time and at the scheduled location. Scratch paper will be issued on the day of the exam and all students are required to sign the scratch paper and return it to the exam proctor prior to leaving the

room. No other paper items will be allowed during the exam unless supplied by the faculty administering the exam. All exams must be uploaded before leaving the classroom; in the event of a power outage or loss of Wi-Fi connection all students are required to upload the exam at the earliest possible reconnection time, however proof of exam closeout will be required prior to leaving the classroom.

- Students wishing to review their exams with the course coordinators or with a specific faculty member must do so within 2 weeks of when the exam scores are posted, or within 1 week of the time that the score for the final exam is posted.
- Problems or issues with a question should be first directed, via e-mail, to the person who wrote it. The course coordinator(s) should be copied on this email, but it is the responsibility of the question's author to address the concern(s). If the student is unsure which faculty member wrote a specific question, then he or she may ask the course coordinator. In the written challenge, the student is expected to include references or rationale to support their challenge of the question. The challenge will be reviewed by the faculty member, and his or her decision will be shared with the course coordinator(s). Discussion of a dispute will occur only after the written query is submitted. Challenges of test questions for the first 4 exams will only be considered within 2 weeks of when the test scores are posted. For the final examination, challenges of test questions will only be considered within 1 week of the time that the scores are posted.
- In the event that there is an issue with a particular test question, adjustments to scores will be made based on discussions between the test question writer and the course coordinator.
- The use of programmable calculators and electronic devices capable of storing, receiving or transmitting data are prohibited during an exam or quiz unless expressly authorized by the course instructor. Such devices must be turned off and left with your belongings in the front of the room.
- Mid-term grades will be posted on-line for students to view via Banner. Mid-term grades indicate a student's status at mid-semester only and do not indicate the final performance outcome of a student.
- Late assignments will only be accepted with an excused absence.
- "Students scoring <70% on any exam and an overall exam average <70% (excludes quizzes, assignments, bonus, etc.) will be required to submit to the coordinator written, narrative responses to select lecture objectives that will be provided within 48 hours of the posting of their exam grade to Moodle. These objectives will be in the form of a Moodle assignment and represent unit--- or lecture---level objectives to be tested upon in the next scheduled course exam.

Written responses must be submitted no later than one calendar week before the next scheduled exam. Responses must be written in complete sentences and may not be copied or pasted from any source, including class notes, treatment guidelines, textbooks, or any internet site. Submissions found to contain responses that have not been written in a student's own words will be considered a failure to submit.

In addition, students will be required to review each failed exam's ExamSoft---generated missed item report with the course coordinator or instructor responsible for each section of material. The discussion should include the student's reasoning for the incorrect answer as well as the reason for the correct answer.

In addition to answering objectives as described above and reviewing missed item reports, first professional year students scoring <70% on any exam and having an overall exam average <70% (excludes quizzes, assignments, bonus, etc.) will meet with the Director of Professional Affairs.

Failure to submit this required assignment will result in ineligibility to remediate.

### **Grading Scale:**

89.5 – 100%	A
79.5 – 89.49%	B
69.5 – 79.49%	C
59.5 – 69.49%	D
≤59.49%	F

**Student Success Policy:** <http://www.ulm.edu/pharmacy/documents/ospa/earlyintervention.pdf>

**Remediation Policy:** <http://www.ulm.edu/pharmacy/documents/ospa/remediationpolicy.pdf>

## IX. Class Policies and Procedures

At a minimum, all policies stated in the current ULM Student Policy Manual & Organizational Handbook should be followed (see <http://www.ulm.edu/studentpolicy/>). Additional class policies include:

### a. Textbooks (required):

1. David E. Golan, Ehrin J. Armstrong, April W. Armstrong, eds. Principles of Pharmacology: The Pathophysiologic Basis of Drug Therapy, 4nd edition. Wolters Kluwer Health/Lippincott Williams & Wilkins 2017. ISBN 9781451191004 (available through LWW Health Library).
2. Brunton LL, Lazo JS, Parker KL, eds. Goodman and Gilman's, The Pharmacological Basis of Therapeutics, 13<sup>th</sup> Edition, McGraw-Hill, 2018. ISBN 9781259584732 (available through AccessPharmacy)
3. Kathryn L. McCance, Sue E. Huether. Pathophysiology: The Biologic Basis for Disease in Adults and Children, 8<sup>th</sup> Edition, Elsevier. ISBN 9780323583473
4. Additional REQUIRED reading materials may be posted on Moodle by course faculty.

- b. Attendance Policy:** Class attendance is regarded as an obligation as well as a privilege, and students are expected to know attendance regulations and to attend regularly and punctually at classes in which they are enrolled. Failure to do so may: (1) prevent access to the classroom during regularly scheduled times; (2) jeopardize a student's scholastic standing; and (3) lead to suspension from the School or University. Students must submit excuses for class absences to course coordinators within three class days after returning to classes.

Professors shall accept an official University excuse. With the following exceptions, professors are to determine whether absences are excused or unexcused: 1) Absences arising from authorized trips away from the University or from special duties at the University shall be excused. 2) Absences arising from a student's confinement in a hospital or other in-patient facility or doctor's excused absences shall be excused. Students are responsible for verifying providing documentation to the faculty, which will be verified. 3) Absences arising from a death in the immediate family shall be excused. The immediate family is defined as spouse, child, step-child, mother, father, sister, brother, grandmother, grandfather, step-mother, step-father, step-brother, step-sister, aunt, uncle, mother-in-law or father-in-law.

- c. Make-up Policy:** Each student is expected to attend each exam at the date and time specified. If a student cannot attend an exam due to valid University excuse, he/she must speak directly with the course coordinator, as soon as possible. The course coordinator must be notified **prior** to an examination if a student misses an exam. The ULM SOP Excused Absence Policy must be followed. Please refer to the official document for details. In case of emergency, the course coordinator must be notified within 48 hours of the emergency. Failure to do so will result in a zero (0) grade for that exam. Make-up exams will be prepared at the same or higher level than the original exam. The format of the make-up exam may be written or oral. Failure to attend a scheduled make-up exam will result in a zero (0) grade for that exam. Students missing an exam due to a University approved excuse will take the make-up exam during the week of finals, or as determined by the course coordinator.  
<http://www.ulm.edu/pharmacy/documents/ospa/excusedabsence.pdf>
- d. Academic Integrity:** Faculty and students must observe the ULM published policy on Academic Dishonesty (see Page 4 of the ULM Student Policy Manual - <http://www.ulm.edu/studentpolicy/>). All professional students will adhere to the standards set forth in the School of Pharmacy's Code of Conduct (<http://www.ulm.edu/pharmacy/documents/ospa/codeofconductv82011.pdf>).

## Censures (Penalties)

Academic dishonesty will result in a referral to the Committee on Ethical and Professional Standards with a recommendation for a grade of “F” for the course and expulsion from the School of Pharmacy. Academic dishonesty includes, but is not limited to, the use of information taken from others’ work or ideas, the provision of help to others on non-collaborative evaluations (tests, quizzes, etc.), collaboration on take home exams, or the use of unapproved information or electronic devices to assist in obtaining an answer to the question

- e. **Course Evaluation Policy:** At a minimum, students are expected to complete the online course evaluation.
- f. **Student Services:** Information concerning student services in the School of Pharmacy can be found in the School of Pharmacy Student Handbook. In particular, students should pay special attention to the University’s technical standards and policies concerning students with special needs (<http://www.ulm.edu/studentpolicy/studentpolicy.pdf>). ULM student services, such as the Student Success Center (<http://ulm.edu/cass/>), Counseling Center (<http://ulm.edu/counselingcenter/>), and Student Health Services, is available at the following Student Services web site <http://ulm.edu/studentaffairs/>. Students with special needs requiring accommodations MUST follow the process described at <http://rxweb.ulm.edu/pharmacy/student/specialneeds.pdf>.

### Mental Wellness on the ULM Campus

If you are having problems with emotional, social, and/or behavioral issues please call any of the mental health clinics on the ULM campus to make an appointment. All services are free to ULM students, staff, and faculty, and are strictly confidential.

- COP Office of Student and Professional Affairs: 342-3800
- ULM Counseling Center: 342-5220
- Marriage and Family Therapy Clinic: 342-5678
- Community Counseling Center: 342-1263
- ULM HELPS (Helping Educators and Learners Prevent Suicide) Project Office: 342-1335

The University of Louisiana at Monroe strives to serve students with special needs through compliance with Sections 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. These laws mandate that postsecondary institutions provide equal access to programs and services for students with disabilities without creating changes to the essential elements of the curriculum. While students with special needs are expected to meet our institution's academic standards, they are given the opportunity to fulfill learner outcomes in alternative ways. Examples of accommodations may include, but are not limited to, testing accommodations (oral testing, extended time for exams), interpreters, relocation of inaccessible classrooms, permission to audiotape lectures, note-taking assistance, and course substitutions.

*Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds, including federal loans and grants. Furthermore, Title IX prohibits sex discrimination to include sexual misconduct, sexual violence, sexual harassment and retaliation. If you encounter unlawful sexual harassment or gender-based discrimination, please contact Student Services at 318-342-5230 or to file a complaint, visit [www.ulm.edu/titleix](http://www.ulm.edu/titleix).*

- g. **Emergency Procedures:** Please review the emergency escape plan in the classrooms and hallways of the Bienville building. Move quickly and in an orderly manner to the appropriate stairwell and exit the building. The meeting place for this class will be the far end of the north parking lot between the Bienville building and Broadmoor Blvd. Under no circumstances is the elevator to be used for emergency evacuation. Any student needing assistance should notify the professor immediately. For emergencies, to contact University Police, call 1-911 from landlines and **342-5350 from cell phones**.

**The course coordinators reserve the right to adjust the syllabus or schedule, in accordance with University and School policies and procedures.**

- h.** Federal Regulations require determination and verification of every students' physical location while enrolled in classes (where they are physically located while taking classes), regardless of the delivery method (on campus, online). At the beginning of every semester and whenever physical location changes, students must update or verify their current location through banner [https://ssb-prod.ec.ulm.edu/PROD/bwgkogad.P\\_SelectAtypUpdate](https://ssb-prod.ec.ulm.edu/PROD/bwgkogad.P_SelectAtypUpdate). Students should do this by the end of the first week of classes.
- i.** This course is a major requirement for the Doctor degree in Pharmacy. Completion of degree requirements leads to eligibility for professional licensure and/or certification in Louisiana upon graduation. Federal Regulations require universities to provide information to students about the alignment between Louisiana's requirements and those of other states. ULM has created a web page with discipline-specific information containing hyperlinks to Licensure Boards in the United States <https://www.ulm.edu/professional-licensure-disclosures/index.html>. Program Directors and/or faculty will discuss this information with you during advising or other program meetings but is also available to answer questions and address any concerns you might have. It is also important to note that licensure or certification requirements are subject to change. Although ULM Program Directors annually review and update licensure information for every state, the faculty recommends that before enrolling in a program and throughout enrollment, students communicate with the applicable state board to confirm understanding and whether upon completion of ULM's program, they will meet requirements.

## X.

## Course Schedule – PHRD 4035 Pathophysiology II

Class will meet in Bienville 340 Monday, Wednesday and Friday at 10:00-10:50am

	<b>Date</b>	<b>Lecture</b>	<b>Instructor</b>
1	M Jan. 11	Concepts of the Immune System	Dr. Chamcheu
2	W Jan. 13	Lymphoid Organs and Tissues	Dr. Chamcheu
3	F Jan. 15	Antigen Recognition	Dr. Chamcheu
	<b>M Jan. 18</b>	<b>Dr. Martin Luther King, Jr. Holiday NO CLASS</b>	
4	W Jan. 20	Humoral Immunity	Dr. Chamcheu
5	F Jan. 22	Inflammation and Complement	Dr. Chamcheu
6	M Jan. 25	Cell-Mediated Immunity	Dr. Chamcheu
7	W Jan. 27	Hypersensitivity/Allergy	Dr. Chamcheu
8	F Jan. 29	Immunodeficiencies, Transplantation	Dr. Chamcheu
9	M Feb. 1	Urinary System: Kidney Function	Dr. Jackson
10	W Feb. 3	Basic renal processes (including glomerular filtration, transport)	Dr. Jackson
11	F Feb. 5	<i>Review Exam</i>	
12	M Feb. 8	<b>Examination One: Jan. 11 – Jan. 29 (80 points)</b>	
13	W Feb. 10	Renal Functions (clearance, RAA, countercurrent mechanism)	Dr. Jackson
14	F Feb. 12	Alterations in Kidney Function	Dr. Jackson
	<b>M Feb. 15</b>	<b>Mardi Gras Holiday NO CLASS</b>	
	<b>W Feb. 17</b>	<b>Mardi Gras Holiday NO CLASS</b>	
15	F Feb. 19	Alterations in Kidney Function	Dr. Jackson
16	M Feb. 22	Respiration and Respiratory mechanics	Dr. Liu
17	W Feb. 24	Gas Exchange; control of respiration	Dr. Liu
18	F Feb. 26	Acid-base Balance	Dr. Liu
19	M Mar. 1	Respiratory disorders: asthma, emphysema, chronic bronchitis	Dr. Liu
20	W Mar. 3	ARDS: cystic fibrosis	Dr. Liu
21	F Mar. 5	<b>Examination Two: Feb. 1 - Mar. 3 (100 points)</b>	
22	W Mar. 8	Hypothalamus and pituitary; circadian rhythms	Dr. Barabutis
23	W Mar. 10	Thyroid Hormones	Dr. Barabutis
24	F Mar. 12	Adrenal Hormones; stress	Dr. Barabutis
25	M Mar. 15	Pituitary, thyroid, and adrenal dysfunction	Dr. Barabutis
26	W Mar. 17	Fuel metabolism and pancreatic hormones	Dr. Barabutis
27	F Mar. 19	Diabetes mellitus	Dr. Barabutis
28	M Mar. 22	Diabetes mellitus	Dr. Barabutis
29	W Mar. 24	Parathyroid, calcium metabolism, bone	Dr. Barabutis
30	F Mar. 26	Osteoporosis, Osteoarthritis	Dr. Barabutis
31	M Mar. 29	<i>Review exam</i>	
32	W Mar. 31	<b>Examination Three: Mar. 03 - Mar. 26 (90 points)</b>	
	F Apr. 2	<b>Spring Holiday NO CLASS</b>	
	M Apr. 5	<b>Spring Holiday NO CLASS</b>	
	W Apr. 7	<b>Spring Holiday NO CLASS</b>	
	F Apr. 9	<b>Spring Holiday NO CLASS</b>	
33	M Apr. 12	Female Reproduction	Dr. Liu
34	W Apr. 14	Female Reproductive issues: infertility, HRT	Dr. Liu
35	F Apr. 16	Male Reproduction	Dr. Liu
36	M Apr. 19	Male Reproductive issues: BPH, ED	Dr. Liu
37	W Apr. 21	Introduction to cancer biology	Dr. Liu
38	F Apr. 23	Introduction to cancer biology	Dr. Liu
39	M Apr. 26	Breast and lung cancer pathophysiology	Dr. Liu
40	W Apr. 28	Breast and lung cancer pathophysiology	Dr. Liu
41	F Apr. 30	Colon and prostate cancer pathophysiology	Dr. Liu
42	M May 3	Colon and prostate cancer pathophysiology	Dr. Liu
43	W May 5	Pituitary, thyroid cancer pathophysiology	Dr. Liu
44	F May 7	<i>Review Exam</i>	
45	T May 11	<b>Final Exam: April 12 - May 5 (110 points)</b>	