

PHRD 5022- Therapeutics VI
(Gastrointestinal/Nutrition/Hepatic/Respiratory)
M, W 10:00-11:50 B170

I. Contact Information

Course Coordinator

<p>Tibb Jacobs, PharmD, BCPS Clinical Professor, School of Clinical Sciences Office: Shreveport Phone: *318-573-8115 (cell) *Email: jacobs@ulm.edu Office hours: by appointment</p>
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Course Instructors:

<p>Yong-Yu Liu, PhD, MD Professor, School of Basic Pharm & Tox Sciences *Office: Bienville 368 Phone: 318-342-1709 *Email: yliu@ulm.edu Office hours: M-Fri 8-11 am or by appointment</p>	<p>Girish Shah, PhD Professor, School of Basic Pharm & Tox Sciences *Office: Bienville Phone: 318-342-1693 *Email: shah@ulm.edu Office hours: M-Th 1-4 pm</p>
<p>Andrew Bolinger, PhD Assistant Professor, School of Basic Pharm & Tox Office: Bienville 316 Phone: 318-342-1993 Email: bolinger@ulm.edu Office hours:</p>	<p>Hanna Welch Rotundo, PharmD, BCACP Clinical Assistant Professor, School of Clinical Sciences Office: New Orleans Campus Phone: 318-342-6602 *Email: hawelch@ulm.edu Office hours: TBA</p>
<p>Jill Comeau, PharmD, BCOP Associate Professor, School of Clinical Sciences Office: Shreveport Phone: 318-342-1814 *Email: comeau@ulm.edu Office hours: TBA or by appointment</p>	<p>Stephen Hill, PharmD, BCPS Clinical Associate Professor, School of Clinical Sciences *Office: Bienville 117 Phone: 318-342-1730 *Email: shill@ulm.edu Office hours: M-Th 1-4 pm and F by appointment</p>
<p>Shawn Manor, PharmD, BCPS Clinical Professor, School of Clinical Sciences Office: Shreveport Campus Phone: 318-342-1800 *Email: manor@ulm.edu Office hours: M-Th 1-4 pm by appointment only</p>	<p>Meng Su, PhD Assistant Professor, School of Basic Pharm & Tox Office: Bienville Phone: 318-342- Email: Office hours:</p>

*Preferred method of contact

II. Course Pre-requisites/Co-requisites

Pre-requisites - PHRD 4085 – (Therapeutics III – Infectious Disease)

Co-requisites – None

III. Course Description

4 Cr. Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications where applicable) as they apply to drug therapy management of disease.

IV. Curricular Objectives and Outcomes

CAPE 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.

CAPE Domain 2 – Essentials for Practice and Care

2.1. Patient-centered care (Caregiver) – Provide patient-centered care as the medication expert (collect and interpret evidence, prioritize, formulate assessments and recommendations, implement, monitor and adjust plans, and document activities.)

CAPE Domain 3 – Approach to Practice and Care

3.1. Problem Solving (Problem Solver) – Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution.

ACPE APPENDIX 1

Biomedical Sciences

Human Physiology

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

Pharmaceutical Sciences

Medicinal Chemistry

Chemical basis of drug action and behavior in vivo and in vitro, with an emphasis on pharmacophore recognition and the application of physicochemical properties, structure activity relationships, intermolecular drug-receptor interactions, and metabolism to therapeutic decision-making.

Pharmacogenomics/genetics

Genetic basis for disease and individual differences in metabolizing enzymes, transporters, and other biochemicals impacting drug disposition and action that underpin the practice of personalized medicine.

Pharmacology

Pharmacodynamics, mechanisms of therapeutic and adverse drug actions and interactions, lifespan-dependent variations in physiology or biochemistry that impact drug action and effectiveness, and application of these principles to therapeutic decision making.

Clinical Sciences

Clinical Pharmacokinetics

Application of basic pharmacokinetic principles and mathematical models to calculate safe and effective doses of drugs for individual patients and adjust therapy as appropriate through the monitoring of drug concentration in biological fluids.

Patient Assessment

Evaluation of patient function and dysfunction through the performance of tests and assessments leading to objective (e.g., physical assessment, health screening, and lab data interpretation) and subjective (patient interview) data important to the provision of care.

Pharmacotherapy

Evidence-based clinical decision making, therapeutic treatment planning, and medication therapy management strategy development for patients with specific diseases and conditions that complicate care and/or put patients at high risk for adverse events. Emphasis on patient safety, clinical efficacy, pharmacogenomic and pharmacoeconomic considerations, and treatment of patients across the lifespan.

V. Course Specific Objectives and Outcomes

At the conclusion of this course, students should be able to:

- Demonstrate knowledge of the medicinal chemistry, pharmacological mechanism of action and related pharmaceutical topics of selected medications and medication classes used to treat endocrine disorders. (1.1)
- Identify appropriate non-pharmacologic therapy, based upon patient- and disease-specific information. (1.1, 2.1, 3.1)
- Develop appropriate pharmacotherapeutic regimens based upon patient- and disease-specific information. (1.1, 2.1, 3.1)
- Develop a plan for monitoring the pharmacotherapeutic regimen for efficacy, toxicity, and adverse effects. (1.1, 2.1, 3.1)
- Develop a plan for educating the patient regarding drug therapy. (1.1, 2.1, 3.1)
- Review a patient-specific drug therapy regimen and make adjustments as necessary. (1.1, 2.1, 3.1)

VI. Course Topics

Topics to be covered in this module includes gastrointestinal and respiratory system pathophysiology, pharmacology, medicinal chemistry, and drug delivery. Therapeutics topics include GERD/PUD, nausea/vomiting/diarrhea/constipation, IBD/IBS, hepatitis, cirrhosis, hepatic failure, drug induced hepatotoxicity, nutrition cystic fibrosis, pulmonary hypertension, tuberculosis, asthma, theophylline concepts, chronic obstructive pulmonary disease, and smoking cessation.

VII. Instructional Methods and Activities

Instructional methods may include traditional lectures, distance learning, in-class discussion of patient cases, small group discussions, problem-based learning, case-based learning, and individual projects or assignments.

VIII. Evaluation and Grade Assignment

- Exams may consist of any combination of multiple choice, true/false, short answer, and clinical situations as determined by the instructor, administered in electronic format by use of ExamSoft. Each student will be required to present to the exam with a working computer on which the exam has been downloaded. Scratch paper will be provided and must be returned prior to exiting the classroom following the exam.
- Exams will be issued using Exam Soft in the student's assigned classroom. The exam will be made available in a time such that students will be able to download the exam ***PRIOR*** to the test time. Students will not be given extra time to take the exam to allow for the downloading of the test document.
 - If an exam is administered to a student in mandatory self-isolation or who is ill, the exam may be taken outside the classroom if the student has a verified and approved excuse. If a student will be outside the classroom for the exam for self-isolation or illness, he or she **MUST** contact the

course coordinator BEFORE the exam begins and submit an excuse for approval. Students taking exams outside the classroom may be monitored using a live proctor via Zoom (or similar platform) or software to detect suspected misconduct. If monitoring is not possible due to limitations of technology, the student will not be allowed to take the exam at the scheduled date and time and will be administered a makeup exam at a date and time chosen by the course coordinator(s).

- Students must upload the exam in a timely fashion. Failure to do so will result in a zero on that exam. In the event of an internet issue, students who have an issue uploading the exam will contact the course coordinators immediately and it will be addressed at the discretion of the coordinators.
- **Each lecture period will be worth 12 points.**
- Students wishing to review their exams with the course coordinators or with a specific lecturer must do so *within 2 weeks* of when the test scores are posted, or *within 1 week* of the time that the score for the final exam is posted.
- Problems or issues with question(s) should be first directed, via e-mail, to the instructor who wrote it. The course coordinator(s) should be copied on this email, but it is the responsibility of the instructor to address the concern(s). (If the student is unsure which instructor wrote a specific question, then he or she may ask the course coordinator.) The student is expected to include references or rationale to support their challenge of the question in writing. The challenge will be reviewed by the instructor, and his or her decision will be shared with the course coordinator(s). Discussion of a dispute will occur only after a written query is submitted, with reasoning for the challenge.
- After the exams have been graded and an item analysis performed, questions may be discarded or otherwise adjusted at the discretion of the Course Coordinators, in consultation with the faculty on that exam, before arriving at final grades. When, due to faculty concerns regarding a question appearing on an administered examination, or as the result of a student-generated appeal that is judged to be valid and of merit by course faculty and/or coordinators, the question will generally be omitted from the grade calculation for all students – the total points for the course grade will be reduced. Course coordinators reserve the right to deviate from this general guideline, however, according to their professional judgment as it pertains to the specifics of the issue with the question deemed to be flawed.

Exam 1: 102 points

Exam 2: 102 points

Exam 3: 96 points

Assignments/quizzes TBD

Grading Scale:

89.5 – 100% A

79.5 – 89.49% B

69.5 – 79.49% C

59.5 – 69.49% D

≤ 59.49% F

- Any student earning a non-passing grade of “D” or “F” on an exam will be required to participate in mandatory tutoring sessions offered by the course instructor(s) until such a time that they obtain a passing average in the course.

- Undergraduate 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.
- **In order to be eligible for remediation at the end of the semester, students must comply with the ULM COP Student Success Policy throughout the semester.**
- **Student Success Policy:**
<https://www.ulm.edu/pharmacy/documents/admin/earlyinterventionaugust2022final.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. Chisholm-Burns M, Schwinghammer TL, Wells BG, Malone PM, Kolesar JM, DiPiro JT, eds. *Pharmacotherapy: Principles and Practice*. 2nd ed, New York, McGraw-Hill, Inc., 2010. ISBN 9780071621809
2. Brunton LL, Lazo JS, Parker KL, eds. *Goodman and Gilman's, The Pharmacological Basis of Therapeutics*, 11th ed, McGraw-Hill, 2006. ISBN 9780071422802 (available through AccessPharmacy)
3. Lemke, Williams, Roche, Zito, eds. *Foyes Principles of Medicinal Chemistry* 7th ed., Walters Kluwer/Lippincott Williams & Wilkins, 2013. ISBN 978-1-60913-345-0. (This text is available via our LW&W Health Library collection.)
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 **in person** 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 not be in the same format as the original exam (i.e. make up may have short answer instead of multiple choice questions). Failure to attend a scheduled make-up exam will result in a zero (0) grade for that exam. **All students missing an exam due to a university approved excuse will take the make-up exam on December 4, 2024 at 9:00 AM**

- 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>).
- e. Academic dishonesty will result in a referral to the Academic Standards and Ethics Committee. If the student is found guilty of Ethical and Professional misconduct by the committee, they will receive a zero for the assigned points (graded assignment or test) and up to an "F" in the course from the course coordinator in addition to any disciplinary action recommended by the Academic Standards and Ethics Committee. 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, ec.), collaboration on take home exams, or the use of unapproved information or electronic devices to assist in obtaining answers.

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.*

- 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/bwggkogad.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 of Pharmacy degree. 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:
Monday and Wednesday 10:00-11:50

Lecture #	Date	Title	Faculty	Points on exam	Due date for TQ	Active Learning Pts
1	8/26	Respiratory pathophysiology/pharmacology	Liu	6		
2		Pharmacology of mast cell stabilizers, leukotriene receptor antagonists, and intranasal corticosteroids	Liu	6		
3	8/28	Med Chem of mast cell stabilizers, leukotriene receptor antagonists, and intranasal corticosteroids	Bolinger	6		
4		Respiratory med chem	Bolinger	6		
	9/2	LABOR DAY HOLIDAY				
5	9/4	Respiratory med chem	Bolinger	6		
6		Asthma	Jacobs	6		
7	9/9	Asthma	Jacobs	6		
8		Asthma	Jacobs	6		
9	9/11	Asthma	Jacobs	6		
10		Asthma	Jacobs	6		
11	9/16	COPD	Rotundo	6		
12		COPD	Rotundo	6		
13	9/18	Cystic fibrosis	Comeau	6		
14		Cystic fibrosis	Comeau	6		
15	9/23	Smoking cessation	Rotundo	6		
16		Smoking cessation	Rotundo	6		
17	9/25	Allergic rhinitis	Jacobs	6		
18	9/25	TB med chem	Bolinger	6		
19	9/30	TB pharmacology	Shah	6		
20		TB therapeutics	Rotundo			
	10/2	TEST 1 (lectures 1-17) 102 points				
21	10/7	TB therapeutics	Rotundo	6		

22		PAH pharmacology	Liu	6		
23	10/9	PAH therapeutics	Comeau	6		
24		GI patho	Liu	6		
25	10/14	Pharmacology of antacid agents	Liu	6		
26		-Pharmacology of other GI agents (including prokinetic agents, N/V/D/C agents, monoclonal antibodies, steroids, etc.)	Liu	6		
27	10/16	Pharmacology of DMARDs	Shah	6		
28		Med chem of DMARDs	Su	6		
29	10/21	Med chem of antacids/GI agents	Su	6		
30		Med chem of antacids/GI agents	Su	6		
31	10/23	Therapeutics of solid organ transplant	Below	6		
32		Therapeutics of solid organ transplant	Below	6		
33	10/28	Therapeutics of N/V/D/C	Manor	6		
34		Therapeutics of N/V/D/C	Manor	6		
35	10/30	Therapeutics of GERD	Jacobs	6		
36		Therapeutics of GERD	Jacobs	6		
	11/4	TEST 2 (lectures 18-34) 102 points				
37	11/6	Therapeutics of PUD	Jacobs	6		
38		Therapeutics of PUD	Jacobs	6		
39	11/11	Therapeutics of IBD	Jacobs	6		
40		Therapeutics of IBD	Jacobs	6		
41	11/13	Therapeutics of IBS	Jacobs	6		
42		Med chem of Hepatitis	Su	6		
43	11/18	Med chem of hepatitis	Su	6		
44		Pharmacology of hepatitis	Shah	6		
45	11/20	Hepatic labs	S. Hill	6		
46		Therapeutics of Viral hepatitis	S. Hill	6		
47	11/25	Therapeutics of viral hepatitis	S. Hill	6		

48		Therapeutics of cirrhosis, hepatic failure, and drug induced toxicity	Comeau	6		
	11/27	THANKSGIVING HOLIDAY				
49	12/2	Therapeutics of cirrhosis, hepatic failure, and drug induced toxicity	Comeau	6		
50		Therapeutics of cirrhosis, hepatic failure, and drug induced toxicity	Comeau	6		
	12/4	STUDENT STUDY DAY				
	12/6	TEST 3 (35-50) 96 points FINALS WEEK				