

Therapeutics I – Cardiovascular
PHRD 4064
CRN# 44491

I. Contact Information (*preferred method of communication)

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II. Course Pre-requisites/Co-requisites

Prerequisites: PHRD 4027, PHRD 4035

III. Course Description

6 cr. Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and non-prescription medications) as they apply to cardiovascular drug therapy management.

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*.

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).

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.

Domain 4 – Personal and Professional Development

4.1. Self-awareness (Self-aware) – Examine and reflect on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth.

4.4. Professionalism (Professional) - Exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society.

V. Course Specific Objectives and Outcomes

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

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

Additional subject-area-associated objectives may be posted separately.

VI. Course Topics

Pharmacology, medicinal chemistry and therapeutics related to: hypertension, dyslipidemia, angina, anticoagulation, shock Syndromes, acute coronary syndromes, myocardial infarction, heart failure, Advanced Cardiac Life Support (ACLS), arrhythmias (including atrial fibrillation), thromboembolism and stroke

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. Participation in lectures using distance technology will be expected of all enrolled students.

VIII. Evaluation and Grade Assignment

- There will be four exams and a final exam. The final exam will be comprehensive. Each 50-minute class period will be represented by 6 points on the exam.
Exam 1: 108 points
Exam 2: 84 points
Exam 3: 108 points
Exam 4: 84 points
Final exam: 148 points. (64 points old material, 84 points new material)
Total points for the course: 532*
*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.** Exams and assignments grading will be returned to the students within 2 weeks of completion.
- 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.
- Normal laboratory values will be provided for all questions, unless otherwise specified during class. Lab values that are specific to a particular 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 (inc. right/wrong) 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) Students will have the opportunity to participate in exam review using the delayed secure review feature in ExamSoft, in addition to reviewing questions with individual instructors or course coordinator.
 - 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.
- **Exams will be issued using Exam Soft;** all students are required to download the exams prior to the date of the scheduled exam. In the event that 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 approved 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.
 - **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).**
- Problems or issues with a question 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 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. Thus, after the exams have been graded and an item analysis performed, questions may be discarded or otherwise adjusted at the discretion of the Course Coordinator in consultation with the faculty before arriving at final grades.
- 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 or not within reach if an exam must be taken outside the classroom due to mandatory self-isolation or illness.
- 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.

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/currents.html>

Remediation Policy: <http://www.ulm.edu/pharmacy/currents.html>

Early Intervention Policy: <http://www.ulm.edu/pharmacy/currents.html>

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*. 5th ed, New York, McGraw-Hill, Inc., 2019. (available via AccessPharmacy)
2. Brunton LL, Lazo JS, Parker KL, eds. *Goodman and Gilman's, The Pharmacological Basis of Therapeutics*, 13th ed, McGraw-Hill, 2016. (available via AccessPharmacy)
3. Lemke, Williams, Roche, Zito, eds. *Foyes Principles of Medicinal Chemistry 8th ed.*, Walters Kluwer/Lippincott Williams & Wilkins, 2020. (available via LW&W Health Library collection)
4. Additional REQUIRED reading materials will 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. Students may be allowed to take the exam from home if they are in mandatory self-isolation or ill, but should follow the procedure outline in section VII above to notify the course coordinators. 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 COP 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 at a date and time determined by the course coordinator.
<http://www.ulm.edu/pharmacy/currents.html>

- 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/currents.html>).

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.

Course Schedule - Tentative Course Schedule Fall 2021

**subject to change at the discretion of the Course Coordinator*

Class will be held Tuesday and Thursday 9:30 – 11:10am and Wednesday 1:00 – 2:40pm.

#	Day/ time	Date	Topic – P = Pharmacology, MC = Medicinal chemistry T = Therapeutics	Faculty	Distance Needs?	Points
1	T AM	8/17	Introduction to cardiovascular terminology and monitoring - T	Aymond	Zoom	12 pts
2	W PM	8/18	Cardiac physiology review - P	Jackson		12 pts
3	R AM	8/19	Catecholaminergics and anticholinergics - P	Jackson		12 pts
4	T AM	8/24	Adrenergics – MC	Jois		12 pts
5	W PM	8/25	CCB & RAAS – P	Jackson		12 pts
6	R AM	8/26	CCB & RAAS – MC	Jois		12 pts
7	T AM	8/31	Diuretics and vasodilators – P	Jackson		12 pts
8	W PM	9/1	½ Diuretics and vasodilators – P ½ Diuretics and vasodilators – MC	Jackson Jois		6 pts 6 pts
9	R AM	9/2	Diuretics and vasodilators – MC	Jois		12 pts
10	T AM	9/7	½ Lipid lowering agents – P ½ Lipid lowering agents - MC	Jackson Jois		6 pts 6 pts
-	W PM	9/8	Exam 1 (Lectures 1-9) – 108 points Questions: 9/3, Faculty Review: 9/6			
11	R AM	9/9	Antiplatelets, anticoagulants, fibrinolytics, thrombolytics - P	Jackson		12 pts
12	T AM	9/14	Antiplatelets, anticoagulants, fibrinolytics, thrombolytics - MC	Jois		12 pts
13	W PM	9/15	½ Antiplatelets, anticoagulants, fibrinolytics, thrombolytics – MC ½ Inotropes, vasopressin, cardiac glycosides, antiarrhythmics – P	Jois Jackson		6 pts 6 pts
14	R AM	9/16	Inotropes, vasopressin, cardiac glycosides, antiarrhythmics – P	Jackson		12 pts
15	T AM	9/21	Inotropes, cardiac glycosides, antiarrhythmics – MC	Jois		12 pts
16	W PM	9/22	½ Reversal of anticoagulation – P ½ Reversal of anticoagulation – MC	Jackson Jois		6 pts 6 pts
17	R AM	9/23	Primary prevention – T	S. Hill		12 pts
18	T AM	9/28	Hypertension - T	Jacobs	Zoom	12 pts
19	W PM	9/29	Hypertension - T	Jacobs	Zoom	12 pts
-	R AM	9/30	Exam 2 (Lectures 10-16) – 84 points Questions: 9/23, Faculty Review: 9/27			
20	T AM	10/5	Hypertension - T	Jacobs	Zoom	12 pts
21	W PM	10/6	Hypertension - T	Jacobs	Zoom	12 pts
22	R AM	10/7	Lipid lowering – T	Brooks/ Aymond	Zoom	12 pts
23	T AM	10/12	Lipid lowering – T	Brooks/ Aymond	Zoom	12 pts
24	W PM	10/13	Arrhythmias and antiarrhythmics - T	Aymond	Zoom	12 pts
25	R AM	10/14	Atrial fibrillation - T	Aymond	Zoom	12 pts
26	T AM	10/19	ACS/MI - T	Aymond	Zoom	12 pts
27	W PM	10/20	ACS/MI - T	Aymond	Zoom	12 pts
-	R AM	10/21	Exam 3 (Lectures 17-25) – 108 points Questions: 10/14, Faculty Review: 10/18			
28	T AM	10/26	½ ACS/MI - T ½ Stable angina - T	Aymond	Zoom	6 pts 6 pts
29	W PM	10/27	Thromboembolic disorders – T	Savage	Zoom	12 pts
30	R AM	10/28	Thromboembolic disorders – T	Savage	Zoom	12 pts
31	T AM	11/2	½ Thromboembolic disorders – T ½ Peripheral arterial disease - T	Savage	Zoom	12 pts
32	W PM	11/3	Anti-thrombotic cases	Aymond/ Savage	Zoom	In class activity
33	R AM	11/4	½ Reversal of anticoagulants, treatment of major bleeds - T ½ Pharmacogenomics of anticoag/antiplatelets - T	Hoh Savage	Zoom	6 pts 6 pts
34	T AM	11/9	Hypertensive crisis - T	Hoh	Zoom	12 pts
35	W PM	11/10	Stroke (ischemic/hemorrhagic) - T	Hoh	Zoom	12 pts
-	R AM	11/11	Exam 4 (Lectures 26-33) – 84 points Questions: 11/5, Faculty Review: 11/8			
36	T AM	11/16	Heart Failure - T	S. Hill		12 pts
37	W PM	11/17	Heart Failure - T	S. Hill		12 pts
38	R AM	11/18	Heart Failure - T	S. Hill		12 pts
39	T AM	11/23	ACLS - T	Hoh	Zoom	12 pts

-	W PM	11/24	THANKSGIVING HOLIDAY			
-	R AM	11/25	THANKSGIVING HOLIDAY			
40	T AM	11/30	Shock	Hoh	Zoom	12 pts
41	W PM	12/1	Student Study Day			
		12/6	Comprehensive Final Exam (Lectures 34-40) – 84 points Old material – 64 points Total – 148 points Questions: 12/1, Faculty Review: 12/3			

Comprehensive Final Breakdown

Jackson – 16 points
 Jois – 14 points
 Jacobs – 8 points
 Brooks – 4 points
 Aymond – 12 points
 Hill – 2 points
 Savage – 6 points
 Hoh – 2 points