

**Bone and Joint Module: PHRD 5027 (CRN 62141)****I. Contact Information****Course Coordinators:**

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## II. Course Prerequisites

PHRD 4058, PHRD 4074  
Co-requisite: PHRD 5033

## III. Course Description

2 Cr. Principles of pathophysiology, pharmacology, medicinal chemistry, clinical pharmacokinetics and pharmacotherapy (including both prescription and nonprescription medications) as they apply to bone and joint disease drug therapy management.

## IV. Curricular Objectives and Outcomes (selected from a total of 34)

### a. Provide Comprehensive Patient Specific Pharmaceutical Care

1. Evaluate the appropriateness of a given prescription or medication order based on patient and disease-specific factors.
3. Develop and implement an evidence-based care plan.
5. Document all activities involved with the provision of comprehensive patient specific pharmaceutical care.

### b. Communicate Effectively

6. Counsel and educate patients regarding medication use, disease state management and health maintenance.
8. Collaborate with other healthcare professionals using appropriate effective communication in both written and oral forms.

### c. Think Critically

24. Identify, retrieve, understand, analyze, synthesize, and evaluate information needed to make informed, rational, and ethical decisions.
25. Solve complex problems that require an integration of one's ideas and values within a context of scientific, social, cultural, legal, clinical, and ethical issues.
26. Display habits, attitudes, and values associated with mature critical thinking.

### d. Demonstrate Appropriate Interpersonal, Professional, and Ethical Behaviors.

29. Identify, analyze, and resolve ethical problems involved in pharmacy practice.
31. Collaborate proactively with other health care professionals.
33. Accept the responsibilities embodied in the principles of pharmaceutical care.

34. Demonstrate appropriate interpersonal, intergroup, and cross-cultural behaviors that promote respect and trust from peers, patients, and community members.

## V. Course Specific Objectives and Outcomes

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

- a. Demonstrate knowledge of the medicinal chemistry, pharmacological mechanism of action and related pharmaceutical topics of selected medications and medication classes used to treat bone and joint disorders.
- b. Identify appropriate nonpharmacologic therapy, based upon patient- and disease-specific information. (1, 3, 5, 24, 25, 26, 29, 31, 33, 34)
- c. Develop appropriate pharmacotherapeutic regimens based upon patient- and disease-specific information. (1, 3, 5, 8, 24, 25, 26, 29, 31, 33, 34)
- d. Develop a plan for monitoring the pharmacotherapeutic regimen for efficacy, toxicity, and adverse effects. (1, 3, 5, 8, 24, 25, 26, 29, 31, 33, 34)
- e. Develop a plan for educating the patient regarding drug therapy. (1, 3, 5, 6, 24, 25, 26, 29, 31, 33, 34)
- f. Review a patient-specific drug therapy regimen and make adjustments as necessary. (1, 3, 5, 8, 24, 25, 26, 29, 31, 33, 34)

## VI. Course Topics

Physiology, pharmacology and medicinal chemistry related to selected bone, joint, and muscle disorders, rheumatoid arthritis, osteoarthritis, osteoporosis, gout, systemic lupus erythematosus, and myalgias.

## 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

- There will be 2 exams (with points determined by number of lectures) and a final exam (with points determined by number of lectures). The final exam will be non-comprehensive.
- Quizzes/assignments will be given as deemed necessary by each faculty member.
- Exam dates are scheduled in the course syllabus and will only be changed in the event of University closure.
- Exams will be given using ExamSoft, and may include multiple choice, fill in the blank, short-answer, case- or scenario-based discussion, essay, or any other question format deemed necessary by the lecturers and course coordinators.
  - ExamSoft exams
    - 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.
    - Students will be given 1 blank sheet of scratch paper on which they will write their name and CWID on the top to be turned in immediately after the exam.
    - Scores may be made available immediately at the closing of the exam.
    - 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.
    - Students will **NOT** be allowed to leave the classroom with their computer **PRIOR** to the end of the examination period.

- Students wishing to review their exam will make an appointment with the course coordinators (or their proxy) to do so.
- 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 not be provided.
- Information acquired from previous lectures in 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.
- **Acceptable exam behavior**
  - Only a writing instrument should be at your desk. All book bags and other bags should be left at the front of the room.
  - Cell phones should be turned off and left with your belongings in the front of the room.
  - Students will not be allowed to leave the room to go to the restroom during the exam, unless accompanied by a faculty member of the same sex, provided there is another proctor to remain in the room.
  - For exams given using ExamSoft, computers used for the exam must remain in the classroom until the class period is over.
  - **Students who arrive to an exam after it has started will be sent to the OSPA and will not be given additional time to complete their exam. A warning will be issued and noted after the first offense. A grade of ZERO will be given for subsequent offenses. Arriving late disturbs fellow classmates and will not be tolerated.**
- Use of programmable calculators will not be allowed during quizzes or exams.
- **In the event that a question is eliminated from an exam after it has been printed/downloaded, the exam will be graded based on the remaining number of questions and adjusted to represent the correct number of points.**
  - *For example, on a 100-point exam, if one 2-point question is eliminated, the exam will now be worth 98 points, not 100 points. No credit will be given for the eliminated question.*
- Students wishing to challenge a question on the test must provide the course coordinators with a **written (email preferred)** statement that identifies which question(s) is/are being challenged, why the student feels his or her answer(s) is/are correct, and references from recent (published within the last 1-2 years) primary or tertiary literature to support the claim. Problems or issues with question(s) should be first directed, via e-mail, to the faculty member who presented the material. The course coordinators should be copied on this communication. In the event that the faculty member and the student cannot arrive at an acceptable conclusion, the course coordinators should be contacted regarding the issue. Discussion of a dispute will occur only after a written query is submitted. Challenges of test questions will only be considered *within 2 weeks* of when the test scores are posted.
- Individual test grades for the course will be based strictly upon these percentages. There will be no curving or adjustments of grades except in the case of an incorrect question.
- Mid-term grades will be posted online 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.

<u>Assessment method</u>	<u>Points</u>
Examinations	
Exam #1 (lectures 1-8)	70
Exam #2 (lectures 9-14)	60
Final (lectures 15-23)	70
Assignments/quizzes	TBD

#### **Grading Scale:**

89.5 – 100%	A
79.5 – 89.4%	B
69.5 – 79.4%	C
59.5 – 69.4%	D
≤ 59.4%	F

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

“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 24 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.

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

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

Remediation is a privilege that must be earned through demonstrated attendance and active participation throughout the semester that the non-progressing grade was earned. To be eligible for remediation, the student must have demonstrated regular attendance, completed all assigned work in the course and utilized other academic resources such as tutoring and meetings with the instructor.

Remediation will be offered to any student earning a course average of  $\geq 65\%$  regardless of the total number of students failing. If  $\geq 7\%$  of the enrolled students fail to earn a grade of “C” or better in a required course, then remediation will be allowed for any student earning a final non-progressing grade of “D” or “F” for the course. Those who choose remediation will be given an incomplete (“I”) until the time that remediation is finished.

Students choosing remediation must make a score of  $\geq 70\%$  on the targeted remediation exam to pass and receive a final grade of “C” in the course. No grade higher than a “C” can be made in the course with remediation. If the student makes a grade of <70% on the targeted final, their original grade will take the place of the “I” grade. The student can then re-enroll in the course at the next offering if eligible based on school progression policies. If this is the student’s second “F” grade in the curriculum, the student will be dismissed from the program.

Students will be allowed to remediate with a targeted remediation exam no more than three (3) times total in their P1-P3 years. Students may not remediate a class more than once. There will be no make-up exams in the remediation.

Students with a grade of “C” or better are not eligible to use remediation in an attempt to improve their grade in that course.

Students receiving a non-progressing grade as a result of a disciplinary action are not eligible to remediate that course in that semester.

**XI. 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*. 3rd 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*, 12<sup>th</sup> ed, McGraw-Hill, 2006. ISBN 9780071422802 (available through AccessPharmacy)
3. Lemke, Williams, Roche, Zito, eds. *Foyes Principles of Medicinal Chemistry* 7<sup>th</sup> 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 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.*

- 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.

#### **ULM's Quality Enhancement Plan:**

ULM's Quality Enhancement Plan (QEP), FOCUS on Biology, represents a multi-year commitment to its students and their future employers to engage students in active learning, help them develop critical thinking skills, and increase their success in introductory biology courses, areas critical to ULM's mission and vision.

ULM's QEP will adapt BIOL 1014 and BIOL 1020 to include a weekly FOCUS session where students engage with the material in hands-on, team-based ways to foster critical thinking and problem-solving skills that they will generalize into future classes and careers. FOCUS stands for Formulate, Observe, Communicate, Use and Synthesize, which represent the learning outcomes for these sessions.

### **ULM Mission**

The University of Louisiana Monroe seeks students who find value in our programs and prepares them to compete, succeed, and contribute in an ever-changing global society through a transformative education.

### **ULM Vision**

The University of Louisiana Monroe will be recognized among the top 200 universities in the nation for excellence in teaching, research, and innovation, with an emphasis on the health sciences.

### **FOCUS on Student Success**

### **FOCUS on Collaboration**

### **FOCUS on Communication**

### **FOCUS on Critical Thinking**

### **FOCUS on Learning**

### **FOCUS on Biology**

### **FOCUS on ULM**

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



**Tentative Course Schedule PHRD 5027 Bone and Joint Module**  
**Class will meet in Bienville 170 Monday and Wednesday, 9:00-9:50am**  
**The final exam is non-comprehensive.**

Lecture	Date	Topic	Instructor	Points	Due Date
1	Jan 14	Calcium/Phos/Vitamin D Pharmacology	Barabutis	10	
2	Jan 16	Calcium/Phos Therapeutics	Robertson	10	
	Jan 21	<i>MLK Holiday</i>			
3	Jan 23	Calcium/Phos Therapeutics	Robertson	10	
4	Jan 28	Osteoporosis Agents, Pharmacology	Barabutis	10	
5	Jan 30	Osteoporosis Agents, Med Chem	R. Hill	10	
6	Feb 4	Osteoporosis Therapeutics	Horace	10	
7	Feb 6	Osteoporosis Therapeutics/Cases	Horace	Zero	
8	Feb 11	Vitamin D Therapeutics	Horace	10	
9	Feb 13	NSAIDs, Med Chem	R. Hill	10	
	Feb 18	<b>Test 1 (Lectures 1-8 = 70 points)</b>			
10	Feb 20	Gout Med Chem (not NSAIDs)	R. Hill	10	
11	Feb 25	Myalgia Therapeutics	Horace	10	
12	Feb 27	Fibromyalgia Therapeutics	Horace	10	
	Mar 4	<i>Mardi Gras Break</i>			
	Mar 6	<i>Mardi Gras Break</i>			
13	Mar 11	Gout Therapeutics	Cockerham	10	
14	Mar 13	Osteosarcoma	Cockerham	10	
	Mar 18	<b>Test 2 (Lectures 9-14 = 60 points)</b>			
15	Mar 20	DMARDs, Med Chem	R. Hill	10	
16	Mar 25	RA/SLE Biologics, Med Chem	R. Hill	10	
17	Mar 27	Rheumatoid Arthritis Therapeutics	Brady	10	
18	April 1	Rheumatoid Arthritis Therapeutics	Brady	10	
19	April 3	Lupus (SLE)	Brady	10	
20	April 8	RA/Lupus Active Learning/Cases	Brady	Zero	
21	April 10	Osteoarthritis Therapeutics	S. Hill	10	
22	April 15	Osteoarthritis Therapeutics	S. Hill	10	
23	April 17	OA Active Learning/Cases	S. Hill	Zero	
	April 22	<i>Spring Break</i>			
	April 24	<i>Spring Break</i>			
24	April 29	Review Day			
25	May 1	<b>Final Exam (lectures 15-23 = 70 points)</b>			