Medication Safety & Pharmacy Informatics
PHRD 5026
CRN# 64547

I. Contact Information

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II. Course Prerequisites/Co-requisites
Co-requisites – PHRD 5049 Integrated Laboratory Sequence

III. Course Description
(2 SCH) Basic pharmacy informatics skills with a focus on medication safety, the pharmacist patient care process, and innovations in pharmacy practice.

IV. Curricular Objectives & 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).
2.2 Medication Use Systems Management (Manager) – Manage patient health care needs using human, financial, technological, and physical resources to optimize the safety and efficacy of medication use systems.
2.3 Health and Wellness (Promoter) – Design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness.
2.4 Population-Based Care (Provider) – Describe how *population-based care* influences *patient-centered care* and influences the development of practice guidelines and evidence-based best practices.

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.
3.2 Educator (Educator) – Educate all audiences by determining the most effective and enduring ways to impart information and assess understanding.
3.5 Cultural Sensitivity (Includer) – Recognize *social determinants of health* to diminish disparities and inequities in access to quality care.
3.6 Communication (Communicator) – Effectively communicate verbally and nonverbally when interacting with an individual, group, or organization.

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 or professional growth.
4.2 Leadership (Leader) – Demonstrate responsibility for creating and achieving shared goals, regardless of position.
4.3 Innovation and Entrepreneurship (Innovator) – Engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals.
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 & Outcomes

A. Describe the relationships between health care technology and pharmacy, patient care, outcomes, interprofessional interactions, and the rest of the health care system.
B. Define and describe basic health care informatics terms and concepts.
C. Conduct a Medication Use Evaluation (MUE).
D. Lead a team to plan and implement an innovative informatics solution to a pharmacy or medication safety problem.

VI. Course Topics

Topics will include core informatics concepts with a focus on three areas: 1) what pharmacy informatics interventions will improve medication safety, 2) what pharmacy informatics concepts are most valued by employers and preceptors, and 3) what concepts will prepare pharmacists-in-training to lead the implementation of new and innovative pharmacy informatics projects. A more specific topic list can be found in the course schedule.

VII. Instructional Methods & Activities

Students will participate in class mainly through team-based learning. This will include active group discussions, problem-based learning, individual and group presentations, and individual and group projects. Slideshows and lectures will be used in addition to activities. Group activities will be student-led with faculty assistance when needed.

Students are expected to come to class prepared to actively participate in the day's activities. Most class sessions will require a submitted assignment before class, or students will be assigned preparatory work and be expected to complete a quiz or other assessment at the beginning of class. Communication, leadership, professionalism, and the degree of participation will be assessed by faculty and by peers. Students should expect to present multiple times during the semester.

Technology to be used: Moodle™, ExamSoft®, drug information resources, other internet-based tools.

VIII. Evaluation & Grade Assignment

TBL Quizzes	**30%**
• iRAT	15%
• tRAT	15%
Individual Project by Faculty	25%
Group Problem-Solving Activity	20%
Peer & Faculty Assessment of Professionalism	15%
Reflection Statement	10%
Bonus Points: added at the end of the semester	2 points on final grade
Total Points:	---

Grading Scale:
Letter grades are determined as follows:
> 90+ = A
> 80-89.99 = B
> 70-79.99 = C
> 60-69.99 = D
> <59.99 = F
> Grades will not rounded to the nearest whole number.

Student Success Policy: http://www.ulm.edu/pharmacy/currents.html

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

Students should expect a quiz or assignment for every class period. Quizzes will be in IRAT/TRAT form (Individual Readiness Assurance Test, Team Readiness Assurance Test). In general, IRAT and TRAT will be averaged for each student's squib score. However, class instructors may add additional points to their topics if needed, or if team-based learning is not possible. Late submission of any quiz or assignment will result in zero (0) points for that quiz.
- Late project/classwork submissions will not be accepted after the due date created by the class instructor, unless the student has obtained an excused absence for the class were the submission was due and a new due date has been approved by the class instructor (course coordinators must be informed).
- Missed Quizzes will cannot be taken outside of the class period without an accused absence from OSPA.

Undergraduate midterm grades will be posted online for students to view via Banner. Midterm grades indicate a student's status at mid-semester only and do not indicate the final performance outcome of a student.

Evaluations and scores will be given to students within 1 week of the assessment or assignment due date. Students who wish to challenge scores must do so within 1 week of scores being returned and should do so in writing. The result of challenges and the method for adjusting scores will be decided at sole discretion of the Course Coordinator.

Projects will be scored based on rubrics posted when projects are assigned. Students who wish to appeal project scores must do so within 1 week of scores being returned, use the rubric as basis for appeal, and do so in writing.

The result of appeals and the method for adjusting scores will be decided at sole discretion of the Course Coordinator.

IX. Class Policies & 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 & Materials

a. Fox BI, Thrower MR, Felkey BG. Building Core Competencies in Pharmacy Informatics. Washington, D.C.: American Pharmacists Association; 2010. ISBN: 978-1-58212-144-4.

   i. This text is available as part of the APhA Pharmacy Library. All pharmacy students have access to this text in an online format free of charge through the College of Pharmacy Library Resources toolbox in Moodle.

   ii. All other resources or texts will be provided to students.

B. Attendance Policy

a. 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.

b. 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. Students are responsible for attending all TBL sessions. In the case that a student is absent, they must contact the course coordinator, the faculty teaching the TBL lesson the day they will miss, and have an excused absence from OSPA.

C. Make-Up Policy

a. Each student is expected to attend each class at the date and time specified. If a student cannot attend a class 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 missing class. 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 day's activity. Make-up activities will be prepared at the same or higher level than the original activity. The format of the make-up activity may be written or oral. Failure to attend a scheduled make-up activity will result in a zero (0) grade for that activity. *Students missing a class due to a University approved excuse will take the make-up activity during the week of finals, or as determined by the course coordinator.* http://www.ulm.edu/pharmacy/currents.html

D. Academic Integrity

a. 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 College of Pharmacy's Code of Conduct (http://www.ulm.edu/pharmacy/currents.html).

b. Censures (Penalties)

   i. 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 College 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**

a. At a minimum, students are expected to complete an online course evaluation as well as any evaluation administered in class by the School of Pharmacy. Changes to this class rely on student feedback. Therefore, individual feedback is encouraged throughout the course.

F. **Student Services**

a. Information concerning student services in the College of Pharmacy can be found in the College 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 .

b. Mental Wellness on the ULM Campus

   i. 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.

   ii. COP Office of Student and Professional Affairs: 342-3800

   iii. ULM Counseling Center: 342-5220

   iv. Marriage and Family Therapy Clinic: 342-5678

   v. Community Counseling Center: 342-1263

   vi. ULM HELPS (Helping Educators and Learners Prevent Suicide) Project Office: 342-1335

c. 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.

d. *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**

a. 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. 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.

J. **Discipline/Course-Specific Policies**

Students are responsible for all information on Moodle and instructor websites. Students are expected to check these sources regularly to access class materials, required readings, assignments, and other information necessary for this course. Course announcements may be made in class or by email; students are responsible for course announcements made by either of these methods.

K. Course Bonus Point Opportunities: Students *may* earn up to 5 points of extra credit onto their final grade by completing the following activities: volunteering to be the TBL group representative for one class period, TBL activity participation, asking throughtful questions and participating in activities provided by our guest speakers, providing commentary on "real world" examples regarding informatics based topics, providing constructive feedback regarding each TBL session, sending in one pharmacy related meme to share with the class (tasteful humor; one meme per student per semester). Each student can earn up to 1 point of extra credit per class period. In order to obtain the extra credit, students **must** fill out the form below by 3pm on the day of class with their extra credit activity. Failure to fill out the form with the student's extra credit by the deadline will forfeit the opportunity for extra credit that day. The instructors have the right to distribute and give extra-credit as they see necessary.

a. https://forms.office.com/Pages/ResponsePage.aspx?id=DDuWkDCw-0SpWp41mvT2aM1uxAB7LGVNpYRpGIXXhgVUQUlaMTdHR1FOOFZTVTNLVlJBSzdBMU5CSC4u

L. Thank you for setting a great example for our students. Your commitment to following mask mandate and social distancing guidelines has played a significant role in the reduction of the spread of the COVID virus at ULM. Due to present circumstances, ULM students, employees, and guests should continue to follow current CDC guidelines by requiring masking and social distancing in all classrooms and buildings throughout campus. Everyone is encouraged to take advantage of frequent hand-washing, available hand sanitizer, masks, and testing opportunities. As this is an ever-changing situation, please continue to monitor university communication. For more information click here.

X. Tentative Course Schedule

Class Meetings: T 1300-1440 in B170 or Active Learning Room

Week	Day	Topic/Activity	Location	Instructor
1	1/16	Course Overview • TikTok Informatics Assessment	Rm: B170	Horace/Below
2	1/23	[TBL] Foundations of Pharmacy Informatics QUIZ	Rm: B170	Below
3	1/30	[TBL] Computing and Healthcare Data Management QUIZ	ALR	Below
4	2/6	**Guest Speaker: Dr. Odinet**	Rm: B170	Horace/Below
		Mardi Gras Break 2/12 – 2/13		
5	2/20	[TBL-D] Medication Use Process – Assessment and Ordering Interventions QUIZ	ALR	Horace
6	2/27	**Guest Speaker: Dr. Jones**	Rm: B170	Horace/Below
7	3/5	[TBL-D] Medication Use Process – Pharmacist Initiation and Assessment of Medication Interventions (guest speaker) QUIZ	ALR	Horace/Below
		Student Peer Assessments Due		
8	3/12	[TBL-D] Medication Use Process – Medication Dispensing and Distribution (guest speaker) QUIZ *Midterm grades due 3/15*	ALR	Horace/Below
9	3/19	[TBL] Medication Use Process – Electronic Systems for Medication Verification, Administration, and Documentation QUIZ	ALR	Donald
10	3/26	[TBL] Medication Use Process – Medication-Related Monitoring and Outcomes Measurement QUIZ	ALR	Donald
		Spring Break 3/29 – 4/5		
11	4/9	Group Problem-Solving Activity *Topics assigned for group topic discussion*	Rm: B170	Horace/Below/ Donald/Savage
12	4/16	Informatics Presentations Zoom connection	Zoom	Horace/Below
13	4/23	**Guest Speaker: Dr. Atim**	Rm: B170	Horace/Below
14	4/30	TikTok Informatics Assessment	Rm: B170	Horace/Below

[TBL] Team Based Learning
[TBL-D] Team Baased Learning by Distance
ALR – Active Learner Room