PHRD 4052 – 41563: RESEARCH METHODS & LITERATURE EVALUATION
Tuesday/Thursday 8:00-9:15 a.m.
Bienville 202

I. Contact Information
Scott Baggarly, R.Ph., M.B.A., Ph.D.  Greg Smith, Pharm.D.
Office: Bienville 261  Office: Bienville 130
Office telephone: 318-342-3020  Office telephone: 342-1711
Email (preferred): baggarly@ulm.edu  Email (preferred): grsmith@ulm.edu
Office Hours: Refer to class Moodle page  Office Hours: TBA

II. Course Prerequisites/Co-requisites
Students must have completed PHRD 4033 (Drug Information Retrieval).

III. Course Description
Research Methods and Literature Evaluation. 3cr. Introduction and application of basic concepts of research methodology and design needed for efficient evaluation, utilization, and clinical application of medication information available in medical literature.

This course is activity-based and covers the research process, common methods used in practice-based research, and principles of scientific literature evaluation. Student activities and projects reinforce these concepts.

IV. Curricular Objectives and Outcomes
Upon completion of the course, the student should be able to meet the following School of Pharmacy Educational Outcomes and Competencies (based upon outcomes from the Center for the Advancement of Pharmacy Education (CAPE)):

Foundational Knowledge
1.1. Develop, integrate, and apply knowledge from the foundational sciences (i.e., biomedical, 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.

Essentials for Practice and Care
2.1. Patient-centered care – 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).


Approach to Practice and Care
3.1. Problem solving – Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution.

3.6. Communication – Effectively communicate verbally and nonverbally when interacting with individuals, groups, and organizations.

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

4.2. Leadership – Demonstrate responsibility for creating and achieving shared goals, regardless of position.
4.3. Innovation and entrepreneurship – Engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals.

4.4. Professionalism – 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
Students who successfully complete the course requirements should achieve the following course objectives and outcomes:

- Interact productively in team-based activities
- Demonstrate proficiency in Microsoft Word (or another word processing program), Excel, and PowerPoint or another presentation software such as Google Slides
- Perform basic literature reviews
- Design a practice-based research project
- Select appropriate statistical methods for hypothesis testing
- Analyze relevant scientific literature and clinical drug trials with respect to research methods, research designs, and statistical analyses
- Prepare properly formatted written research reports according to assigned criteria
- Present timed presentations according to assigned criteria using presentation software

VI. Course Topics
Topics covered this semester will include the research process, research concepts, types of measurement, data management and manipulation, literature reviews, statistical methods, common research designs, data collection methods, and evaluation and analysis of scientific literature. A detailed schedule of topics is included in the course schedule below.

VII. Instructional Methods and Activities
The course will include, but may not be limited to, lecture material using PowerPoint slides, class discussions moderated by the instructor, homework and reading assignments, group assignments, a group research design project including a written report, and a PowerPoint presentation of a clinical trial analysis.

Students are expected to be competent in the use of Microsoft Word (or another word processing program), Microsoft Excel, Microsoft PowerPoint, and the ULM Moodle and email systems. Lack of these competencies may place the student at a disadvantage and could adversely impact the scores on required course activities.

VIII. Evaluation and Grade Assignment
The final grade in the class is expected to consist of the following components:

<table>
<thead>
<tr>
<th>Individual Activities</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam One</td>
<td>100</td>
</tr>
<tr>
<td>Exam Two</td>
<td>80</td>
</tr>
<tr>
<td>Excel Dataset Assignment</td>
<td>20</td>
</tr>
<tr>
<td>Presentation Quiz</td>
<td>10</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100</td>
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<tr>
<td>Professionalism (see below)</td>
<td>15</td>
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</table>

<table>
<thead>
<tr>
<th>Group Activities</th>
<th></th>
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<tbody>
<tr>
<td>Written Research Project Design</td>
<td>50</td>
</tr>
<tr>
<td>PowerPoint Presentation, Clinical Trial</td>
<td>50</td>
</tr>
<tr>
<td>Group class assignments</td>
<td>20</td>
</tr>
</tbody>
</table>

| Total                                       | 445   |
Please Note:
The course may include additional graded assignments or quizzes which may be announced or unannounced. Any such assignments or quizzes will be added to the total points available for the semester and averaged as part of the final grade.

Components of the professionalism grade include attendance (unexcused absences, tardiness), group peer evaluation, compliance with policies, late or incomplete assignments, and class participation (discussion, behavior, inappropriate computer or cell phone use, and responses to clicker questions). The instructor may include additional items as appropriate and/or necessary.

GRADING SCALE: A = 89.5-100%; B = 79.5-89.4%; C = 69.5-79.4%; D = 59.5-69.4%; F = Less than 59.5%.

Exams and quizzes will be administered in ExamSoft, Moodle, or in another appropriate format as determined by the instructors. 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. Students wishing to review their exams with the instructor must do so within 2 weeks of the test date.

Exam Behavior
- Privacy screens must be used at all times during exams.
- Only a writing instrument and a non-programmable calculator should be at your desk. All book bags and other bags should be left at the front of the room. Scratch paper will be given to you.
- The use of programmable calculators and electronic devices, capable of storing, receiving or transmitting data, is 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 front of the room.
- Students are not allowed to leave the classroom during an examination.

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. Textbook(s) and Materials: No textbook is required for the class. Required reading material may be posted on Moodle. Students will also be expected to use the Internet to search for information.

B. Attendance Policy: The ULM School of Pharmacy follows the University Attendance Policy. http://catalog.ulm.edu/content.php?catoid=23&navoid=2875&hl=attendance&returnto=search#Class_Attendance_Regulations_Excused_Absences

C. Make-up Policy: Each student is expected to submit assigned coursework by the due date and to attend each examination at the date and time specified. Coursework or examinations missed due to excused absences will be rescheduled at the discretion of the instructor, and may be in alternate formats. Any presentations and/or examinations that are not completed by the alternative date will be scored as a zero. Students who miss the comprehensive final exam during the scheduled time will receive an "I" for the course in accordance with University and School of Pharmacy policies and procedures.

D. Academic Integrity: Faculty and students must observe the ULM published policy on Academic Dishonesty (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, which may be found at: http://rxweb.ulm.edu/pharmacy/policies/copcodeofconduct.pdf
Students are expected to work independently on examinations and assignments unless it is specifically described by the instructor as a group activity. Academic misconduct includes, but is not limited to:

- Any use of resources other than your own recollection and reasoning ability on an examination unless access to the resource is authorized by the instructor in advance.
- The inappropriate use of electronic or wireless technology (including but not limited to cell phones, PDA’s, or pagers) during an examination.
- Possessing or using any examination question previously used in this course.
- The attempt to reconstruct an examination after it is taken with the intent to share with other students.
- Sharing information about an examination with students who have not taken the exam.

Written reports must adequately reference the work of others; plagiarism is considered academic misconduct. Any student suspected of dishonesty will receive a zero (no credit) for that assignment or examination, and will be reported to the School of Pharmacy Dean’s Office with subsequent actions as per University regulations and policy.

**E. Course Evaluation Policy:** At a minimum, students are expected to complete the on-line course evaluation. Additional assessment opportunities may also be offered.

**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 School’s technical standards and policies concerning students with special needs([http://www.ulm.edu/studentpolicy/studentpolicy.pdf](http://www.ulm.edu/studentpolicy/studentpolicy.pdf)). ULM student services, such as the Student Success Center ([http://ulm.edu/cass/](http://ulm.edu/cass/)), Counseling Center ([http://ulm.edu/counselingcenter/](http://ulm.edu/counselingcenter/)), and Student Health Services, is available at the following Student Services web site: [http://ulm.edu/studentaffairs/](http://ulm.edu/studentaffairs/)

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.

- **SOP 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 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 orderly 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 Bienville 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.

H. **Early Intervention Policy:** Students scoring <70% on any exam and an overall exam average <70% (excludes quizzes, assignments, bonus, etc.) will be required to participate in early intervention until such time as the exam average is 70 or above. The early intervention policy may be found at: [http://www.ulm.edu/pharmacy/documents/ospa/earlyintervention.pdf](http://www.ulm.edu/pharmacy/documents/ospa/earlyintervention.pdf)

In brief, this requires the student to review each failed exam’s ExamSoft-generated missed item report with the instructor responsible for each section of material. Class attendance will be mandatory until the student is no longer part of Early Intervention. In addition, the student is required to submit written responses to course objectives assigned by the instructor no later than one calendar week before the next scheduled exam. Other details are available in the policy. Failure to meet the requirements of the policy will result in the student’s ineligibility to remediate. The remediation policy may be found at: [http://www.ulm.edu/pharmacy/documents/ospa/remediationpolicy.pdf](http://www.ulm.edu/pharmacy/documents/ospa/remediationpolicy.pdf)

I. **Discipline/Course Specific Policies:** Students are to exhibit professional behavior at all times. This includes being prepared for class, being seated and quiet when class is to begin, participating actively and reliably in group activities, and communicating respectfully and articulately with others. Student integrity is an important part of professionalism. As such, a grade of zero will be assigned to any examination or assignment on which a student is found to have cheated (this includes plagiarism). Failure to adhere to University, School of Pharmacy, and class policies or Academic Integrity will result in disciplinary action in accordance with University policy.

J. **Electronic Device Policy:** The use of programmable calculators and electronic devices, capable of storing, receiving or transmitting data, is 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 front of the room.

If a student has a need to be notified during an emergency situation while attending class, he/she should leave the telephone number of the Office of Student and Professional Affairs, 318-342-3800, with the person who may need to contact them. The use of cell phones is not allowed during examinations or quizzes. Students using cell phones during an examination or quiz will be considered to have committed an act of academic dishonesty and will be charged and brought before the committee on ethical and professional conduct.
X. **Tentative Course Schedule**

A. **Contact Information:**
   Instructor: Scott Baggarly, Ph.D.; Bienville 261; 318-342-3020; baggarly@ulm.edu
   Office Hours: Refer to class Moodle page

B. **Schedule:** *The instructor reserves the right to adjust the schedule as needed.*

August 22  (Tue)  Class Introduction, Syllabus, Projects, Groups, Introduction to Research
August 24  (Thur)  Concepts, Variables, and Operational Definitions
August 29  (Tue)  Types of Measurement; Literature Review; Defining Research Problems
August 31  (Thur)  Sampling and Assignment
September 5  (Tue)  Reliability, Validity, Threats to Internal Validity

End of Test 1 Material

September 7  (Thur)  Statistics I
**September 12  (Tue)  EXAM 1**
September 14  (Thur)  Statistics II
September 19  (Tue)  Statistics III
September 21  (Thur)  Research Designs I
September 26  (Tue)  Research Designs II
September 28  (Thur)  Research Designs III
October 3  (Tue)  Epidemiological Research I
October 5  (Thur)  Epidemiological Research II
October 10  (Tue)  Epidemiological Research III

End of Test 2 Material

October 12  (Thur)  Ethics in Research; Scientific Literature Evaluation I
**October 17  (Tue)  EXAM 2**
October 19  (Thur)  FALL HOLIDAY
October 24  (Tue)  Scientific Literature Evaluation II
October 26  (Thur)  Scientific Literature Evaluation III
October 31  (Tue)  Survival Analysis
November 2  (Thur)  Meta-Analysis
November 7  (Tue)  Survey Research I
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
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<tbody>
<tr>
<td>November 9</td>
<td>Thur</td>
<td>Survey Research II; Equivalence/Non-Inferiority/Superiority Trials</td>
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<tr>
<td>November 14</td>
<td>Tue</td>
<td>Scientific Literature Presentations I</td>
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<td>(FINAL SLIDE SET DUE FOR ALL GROUPS)</td>
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<td>November 16</td>
<td>Thur</td>
<td>Scientific Literature Presentations II</td>
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<tr>
<td>November 21</td>
<td>Tue</td>
<td>Scientific Literature Presentations III</td>
</tr>
<tr>
<td>November 23</td>
<td>Thur</td>
<td>THANKSGIVING HOLIDAY</td>
</tr>
<tr>
<td>November 28</td>
<td>Tue</td>
<td>Scientific Literature Presentations IV</td>
</tr>
<tr>
<td>November 30</td>
<td>Thur</td>
<td>Review</td>
</tr>
<tr>
<td>December 5</td>
<td>Tue</td>
<td>9:00 a.m. -- Final Examination (Comprehensive)</td>
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