

PHRD 452 Research Methods & Literature Evaluation

I. Contact Information

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II. Course Prerequisites

Prerequisite: Successful completion of PHRD 433 Drug Information Retrieval

III. Course Description

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

IV. Curricular Objectives and Outcomes

Upon completion of the course, the student should be able to meet the following College of Pharmacy Educational Outcomes and Competencies:

Outcome 2: Communicate Effectively

Competency D: Read, write, speak, listen, and use data, media, and computers to send and respond effectively to communications for varied audiences and purposes

- **Objectives**

- i. Construct appropriate and professional presentations to support communication
 - (a) Demonstrate proficiency in appropriate computer software
 - (b) Prepare appropriate and relevant graphical support from available data
 - (c) Use acceptable reference styles
 - (d) Demonstrate appropriate written, verbal, and non-verbal skills
 - (e) Present and defend ideas in a logical and effective order
 - (f) Demonstrate ethical use in the procurement, derivation, use, and reporting of data
- ii. Use appropriate and professional communication skills

Outcome 4: Identify, Interpret, and Evaluate Literature Needed for the Provision of Drug Information and Pharmaceutical Care

Competency A: Define the question that needs to be answered

Competency F: Explain methods for systematically evaluating literature

Competency G: Evaluate the appropriateness of research methodologies and statistical methods

Competency H: Draw appropriate conclusions from research results

Competency I: Assess the potential impact and implication of published information on current practices

Outcome 6: Think Critically

Competency A: Identify, retrieve, understand, analyze, synthesize, and evaluate information needed to make informed, rational, and ethical decisions

- **Objectives**

- i. Systematically gather, organize, and extract relevant information using a variety of methods and research tools
- ii. Analyze information within appropriate scientific, social, and clinical contexts
 - (a) Identify principles of organization and the logic of arguments

- (b) Identify and test assumptions, biases, and prejudices implicit in arguments
- (c) Employ appropriate mathematical and statistical tools and electronic technology to analyze information
- (d) Assess accuracy, soundness, fairness, significance, relevance, completeness, and persuasiveness of information, arguments, and sources
- iii. Synthesize information in order to draw conclusions, hypothesize, conjecture alternatives, or plan a course of action
- iv. Evaluate conclusions and solutions according to appropriate criteria, and revise as necessary
- v. Provide support for rationale, solutions, and results

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 applicable computer software
- Perform literature reviews
- Design and analyze 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 oral research presentations using appropriate PowerPoint slides

VI. Course Topics

Topics covered this semester will include the research process, research concepts, types of measurement, data management and manipulation, literature reviews, research designs, data collection methods, and evaluation and analysis of scientific literature.

VII. Instructional Methods and Activities

Instructional methods may include, but are not limited to: traditional lectures, distance learning, in-class discussion, small group discussion, problem-based learning, group projects/presentations, individual projects/presentations, lectures/presentations posted on Moodle, independent study, assignments/exercises completed in or out of class, wiki page development, and chat room participation.

VIII. Evaluation and Grade Assignment

- In general, *memorization and regurgitation of information will NOT be emphasized*. Rather, evaluation will largely be based on assessing your understanding of concepts and principles, your ability to apply this understanding in intelligent and reasonable ways, and higher order abilities: analysis, evaluation, and synthesis.
- Quizzes may be given, announced or unannounced, as deemed necessary by each faculty member. Quizzes will be added to the total points available for the course.
- 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 lecturers and course coordinator. Exams may be either a pencil and paper format or an online format through Moodle.
- Information acquired from previous lectures in the course and from other courses in the professional pharmacy curriculum may be needed in preparing for examinations.
- Students wishing to review their exams with the course coordinator must do so *within 2 weeks* of the date the test is taken.

Grading Scale:

90 – 100%	A
80 – 89%	B
70 - 79%	C
60 – 69%	D
<60%	F

Semester Points:

In-class assignments (4 @ 50 pts)	200 points
Exam I	100 points
Exam II	100 points
Final exam	<u>100 points</u> 500 points

Undergraduate mid-term grades will be posted on-line for students to view via Arrow. Mid-term grades indicate a student's status at mid-semester only and do not indicate the final performance outcome of a student.

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:

1. Kumar, R. *Research Methods: A Step-by-Step Guide for Beginners*. 2nd ed. London: SAGE Publications Ltd.; 2005. (ISBN: 141291194X)..
2. Reading material may be posted on Moodle by course faculty or the student may be instructed to use the Internet to search for information.

B. Attendance Policy:

Class attendance is mandatory in all pharmacy courses; therefore, attendance will be taken for all class meetings. Students reported for accumulating more than three **unexcused** absences in a course during an academic semester will be administratively dropped from the course with a “W” grade. In accordance with College of Pharmacy policy and procedure, a grade of “W” will be counted as an “F” grade with respect to academic standards.

Any student who is not present for at least 75% of the scheduled class sessions (excused or unexcused) in any course may receive a grade of W if this condition occurs prior to the last day to drop a course or a grade of F after that date.

Any University-related activity requiring an absence from class will count as an absence when determining if a student has attended 75% of class meetings.

In addition, no student should enter class after the lecture has begun. Students unable to attend class on time will be considered absent for that day.

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 the examination if a student

misses the exam, if possible. Failure to attend a scheduled make-up exam 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. 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 in ULM *Student Policy Manual* - <http://www.ulm.edu/studentpolicy/>).

Students are expected to work independently on examinations and assignments unless it is specifically described by the instructors as a group assignment. Any use of resources other than your own recollection and reasoning ability on an examination is cheating. Inappropriate use of electronic or wireless technology (i.e., cell phones, PDAs, or pagers) during an examination is considered academic misconduct. Having in your possession or the use of any examination question previously used in this course is considered cheating. Any attempt to reconstruct an examination after it is taken with the intent to share with other students is considered cheating. Sharing information about an examination with any other student who has not taken the exam is considered cheating. Any student suspected of dishonesty will receive a zero (no credit) for that assignment or examination, and will be reported to the College of Pharmacy Dean's Office with subsequent actions as per University regulations and policy.

E. Course Evaluation Policy:

The Dean of Assessment or a representative from her office will conduct an in-class assessment of the course and the instructors. Additionally, there will be an opportunity to provide anonymous, specific comments regarding the course at the end of the semester. No faculty members will be given access to the results until after final grades for the course are due.

F. Student Services:

Information concerning student services in the College of Pharmacy can be found in the College of Pharmacy Student Handbook. In particular, pay special attention to the College's technical standards and policies concerning students with special needs.

Information about ULM student services, such as Student Success Center (<http://ulm.edu/cass/>), Counseling Center (<http://ulm.edu/counselingcenter/>), Special Needs (<http://ulm.edu/counselingcenter/special.htm>) and Student Health Services, is available at the following Student Services web site <http://ulm.edu/studentaffairs/>.

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.

H. Discipline/Course Specific Policies:

Not Applicable

X. Tentative Course Schedule

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