

DRUG INFORMATION RETRIEVAL

PHRD 4033

CRN# 43322

I. Contact Information

Course Coordinator:

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II. Course Pre-requisites/Co-requisites

Current Pharmacy Enrollment Standing

III. Course Description

3 cr. This course is designed as an orientation to relevant primary, secondary and tertiary resources used to provide drug information for clinical questions, and associated professional responsibilities. In addition, the course will include information on study designs, biostatistics, and introduction to clinical literature evaluation. The application of timely and rigorously analyzed healthcare literature is essential to formulating and implementing optimum drug therapy policy and decisions. This course will assist in developing skills needed to retrieve relevant literature, evaluate the merits of findings in the literature, and then applying those found to be scientifically sound to the clinical management of patients.

IV. Curricular Objectives and Outcomes

CAPE

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 healthcare 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.

3.6. 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 and 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.

ACPE Appendix 1 Required Elements:

Clinical Sciences 1CS03: Health information retrieval and evaluation - Critical analysis and application of relevant health sciences literature and other information resources to answer specific patient-care and/or drug-related questions and provide evidence-based therapeutic recommendations to healthcare providers or, when appropriate, the public.

Social/Administrative/Behavioral Sciences 1SAS11: Research Design: Evaluation of research methods and protocol design required to conduct valid and reliable studies to test hypotheses or answer research questions, and to appropriately evaluate the validity and reliability of the conclusions of published research studies.

Biomedical Sciences 1BS02: Biostatistics - Appropriate use of commonly employed statistical tests, management of data sets, and the evaluation of the validity of conclusions generated based on the application of those tests to the data sets.

V. Course Specific Objectives and Outcomes

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

- Describe the role and value of the pharmacist as a drug information provider.
- Describe the rationale and approach of using evidence-based medicine.
- Describe and give examples of the three major sources of drug information: references and texts, secondary literature sources and the primary literature.
- Demonstrate the effective use of commonly available print and computer-based drug information resources.
- Perform effective, efficient Internet searching for drug information.
- Develop effective literature search strategies.
- Develop meaningful clinical questions to assist with literature searching.
- Locate and utilize primary literature.
 - Identify the parts of an article

- Identify which journals are considered highly reputable
- Utilize primary literature to answer drug information questions
- When asked a drug information question:
 - Determine the actual information requested
 - Obtain appropriate background information
 - Determine what resources are appropriate to answer the question
 - Formulate an appropriate response after critically evaluating the available resources
 - Document references in the style consistent with the uniform requirements for manuscripts submitted to biomedical journals
- Explain what constitutes an Adverse Drug Event
- Explain the approval process for investigational drugs
- 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
- Interact productively in team-based activities

VI. Course Topics

History of drug information centers, role of the drug information specialist, poison control centers, tertiary resources (texts, Internet information resources, mobile resources), modified systematic approach to drug information, secondary databases (PubMed-Medline, OVID, EBSCO and other library databases, etc.), search strategies for secondary databases, drug information question formulation and response process, adverse drug events, investigational drug approval process, types of variables, types of data, descriptive vs. inferential statistics, measures of central tendency, measures of variability, data distributions, confidence intervals, data presentation, hypothesis testing, power, Type I and Type II Errors, one- and two-tailed hypotheses, p-values, clinical vs. statistical significance, parametric vs. non-parametric statistics, and the Chi-square test, z-test, t-tests (one-sample, two-sample, and paired), ANOVA, F-test, and post-hoc comparisons.

VII. Instructional Methods and Activities

Instructional methods may include: traditional lectures, distance learning, in-class discussion of journal articles, small group discussion, problem-based learning, group projects/presentations, individual projects/presentations, lectures/presentations via Moodle, independent study and assignments/exercises completed in or out of the classroom. Active participation is required during classroom and group activities, and will be moderated by the instructor. 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

There will be three examinations, including a final. Exams I and II will be administered in an OSDIE format, which is an acronym for Objective Structured Drug Information Examination. This practical-style of exam is administered as a series of drug information requests and will be performed in the presence of an instructor. Each OSDIE will test the student's ability to locate answers to typical drug information questions using tertiary, secondary and primary literature sources. Exam I: OSDIE will cover tertiary electronic resources and Exam II: OSDIE will cover answering clinical questions using tertiary, secondary and primary electronic sources. Students will demonstrate their ability to perform pertinent focused searches for drug information answers to clinical questions. Each clinical situation is selected from a variety of common problems that are typically seen in a variety of clinical pharmacy settings.

- OSDIE Grades: Each student will be evaluated on the basis of their written response to the questions and their technique in finding the correct answer. The student must obtain at least 70% on each OSDIE in order to pass this course. In the event that a student does not obtain at least 70% on the OSDIE, he/she will have one additional attempt to obtain a passing score. These two scores will be averaged and that average will be their grade for

the OSDIE. Only one exam date will be offered for the second attempt, which will be at the course coordinator's discretion. Each OSDIE is worth a total of 100 points and the point breakdown is as follows:

- Exam I - OSDIE: There will be 12-14 sets of short-answer questions similar to class exercises worth 100 possible points. Answers will be considered correct or incorrect. Incorrect answers will receive zero points.
- Exam II - OSDIE: There will be 8-10 short sets of questions and one long scenario essay-style questions worth 100 points assigned based on accurate, thorough responses to questions and search strategies.
- The final exam will not be comprehensive and will be administered by ExamSoft®.
- Professionalism/Participation: 20 course points are assigned based on participation, attendance, and professionalism. Excessive absenteeism (particularly missing group presentation) will result in loss of participation points. See the "Professionalism" section in this syllabus for expectations.
- Three announced quizzes will be given throughout the semester covering non-OSDIE lecture material.
- Nine exercises are given throughout the semester to help students prepare OSDIEs.

Semester Points:

<u>Graded Items</u>	<u>Point Value</u>
Exam (OSDIE) I	100
Exam (OSDIE) II	100
Final Exam	60
Professionalism/Participation	20
Quizzes/Exercises	95*
Expected Total	375*

Total points for the course: To be determined*

**This course may include additional group and/or individual graded assignments/exercises or quizzes which may be announced or unannounced. Additional points available from these assignments or quizzes will be added to the total points available for the group assignment category and averaged as part of the final grade.*

Professionalism/Participation:

Students are to exhibit professional behavior at all times. This includes being on time and 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. Components of the professionalism grade include attendance (unexcused absences, tardiness), group peer evaluation, compliance with policies, timely/completed assignments, and class participation (presentations, discussion, behavior, appropriate computer or cell phone use, and responses to clicker questions). NOTE: Synchronous (IN-CLASS or ONLINE) delivered lectures may involve Group/Team-based activities. Professionalism points will be deducted from a student not in attendance to present with their group during these activities. The instructor may include additional items as appropriate and/or necessary.

- *Several (but not all) active-learning exercises will be assigned a grade, which will typically be full credit/no credit. Your best, original effort is expected for all exercises, assignments and activities.*
- *Late assignment submissions will result point deduction or total loss of points for the assignment.*
- *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. The final exam will be multiple-choice, fill-in-the-blank, or short-answer; not essay-style.*

- *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. Students may view their exam results (right/wrong answers) 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)*
- *Exams will be issued using ExamSoft; all students are required to download the exams prior to the date of the scheduled exam. If a student cannot take the exam on the scheduled date the student must reverse download the exam to ExamSoft. Under no circumstances should a student open an examination, except during the scheduled time and at the scheduled 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. All ExamSoft quizzes must be downloaded, completed and uploaded based on the posted deadlines. Ensuring that ExamSoft quizzes/exams/assignments on time are the sole responsibility of the student. Any ExamSoft issues must be communicated to the course coordinator immediately to avoid loss of points.*
- *Barring unexpected events, exam results should be available by the day following the exam unless manual grading is required for problems or essay questions. Every effort will be made to be sure manually graded exams and assignments are graded and recorded within 2 weeks. Students wishing to review their exams or assignments with the course coordinators or with a specific faculty member must do so within 2 weeks of when the scores are posted, or within 1 week of the time that the score for the final exam is posted.*
- *Problems or issues with a question should be first directed, via e-mail, to the person 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 2 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.*
- *Students must not use class time to check email, social media or to text message. Computers may be used during class to view the slides and take notes; however, use of the Internet will not be allowed with the exception of specific web-based resources required for class activities. 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.*
- *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>

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, Materials and Hardware:

1. Malone PM, Mosdell KW, Kier KL and Stanovich JE. *Drug Information: A Guide for Pharmacists*. 6th Edition Stamford, CT: McGraw-Hill, 2014 (Available online at AccessPharmacy – see COP Library Resources Toolbox, or <https://ulm.idm.oclc.org/login?url=https://accesspharmacy.mhmedical.com/book.aspx?bookid=2275>)
2. Claude J. Gaebelien, Brenda L. Gleason. *Contemporary drug information: an evidence-based approach*. 1st Edition Baltimore, MD: Lippincott Williams & Wilkins, 2008 (Available online at LWW Health Library – see COP Library Resources Toolbox, or <https://ulm.idm.oclc.org/login?url=https://pharmacy.lwwhealthlibrary.com/book.aspx?bookid=744>)
3. Additional REQUIRED reading materials may be posted on Moodle by course faculty.
4. **Required Technology:** Laptops will be used extensively during this course, **particularly for quizzes, in-class exercises and exams**. Students' laptops **must** meet the minimum technology requirement policy posted on the pharmacy web page here, <https://www.ulm.edu/pharmacy/intops/technology.html> in order to participate at the highest level of performance in this course. The technical support area of the College of Pharmacy will be available for connectivity issues relating to our wireless network. However, they will NOT be providing in-depth technical support for the computers.

- ### 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 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 during the week of finals, or as determined by the course coordinator.*

Refer to the Excused Absence Process Policy on the Current Students webpage: <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 College 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.

X. Course Schedule - Subject to change at the discretion of the Course Coordinator.

Unless otherwise noted, *Class will meet in Bienville 340 -Tuesday and Thursday 10:00 - 11:15am*

Format Terminology:

LIVE = Synchronous Face-to-face in class meeting during regular class time

ONLINE = Synchronous ONLINE during regular class time; (Zoom link provided)

ASYNCRONOUS = pre-recorded lecture or activity - NO IN-CLASS MEETING live or online

Chapter links listed in the 'Chapter' column are 'recommended' supplemental reading from the Malone text, except for those designated as 'required' (i.e., Lectures 24,25,26).

Date	Lecture	Format	Topic	Chapter	Lecturer
8/17-Tu	1	LIVE	Introduction/Syllabus/Toolbox Review/EBM-1		Dr. G. Smith
---	2	ASYNCRONOUS	Watch Pre-recorded lecture: DI Services lecture (optional)	1	
8/19-Th	3	LIVE	EBM 2 (Systematic Approach) / DI Consult in-class exercise	2	Dr. G. Smith
8/24-Tu	4	ASYNCRONOUS	Drug Information Resources/ Text-based Tertiary	3	Dr. G. Smith
8/26-Th	5	LIVE	Tertiary – Electronic - Facts/Lexi-comp EXERCISE-1		Dr. G. Smith
8/31-Tu	6	ASYNCRONOUS	Tertiary – Electronic – Micromedex EXERCISE-2		Dr. G. Smith
	QUIZ-1		QUIZ-1 (Covers Lectures:1,3,4)		
9/2-Th	7	ASYNCRONOUS	Tertiary – Electronic – Clinical Pharmacology EXERCISE-3		Dr. Donald

9/7-Tu	8	LIVE	Tertiary – Drug Interactions EXERCISE-4 (TEAM QUIZ) DUE during class		Dr. Donald
9/9-Th	9	ASYNC	Watch Pre-recorded lecture: Tertiary – Internet Health Information/Mobile Apps EXERCISE-5		Dr. G. Smith
9/14-Tu	10	LIVE	EX-5 Discussion/OSDIE-1 Prep		Dr. G. Smith
END OF EXAM I: OSDIE MATERIAL - Covers Exercises 1-5					
9/16-Th	---	LIVE	****EXAM I: OSDIE (100pts)****		
9/21-Tu	11	LIVE	Secondary Resources – PubMed/AMA citing EXERCISE-6	12	Dr. G. Smith
9/23-Th	12	LIVE	Secondary Resources – Finding Full-text Articles EXERCISE-7		Dr. G. Smith
9/28-Tu	13	ASYNC	Watch Pre-recorded lecture: Plagiarism/Professional Writing/Citing & Referencing (follow objectives to prepare for QUIZ-2)		Dr. G. Smith
9/30-Th	14	ASYNC	Study Design – Primary Literature and other publications	4,5	Dr. G. Smith
10/5-Tu	15	LIVE	Study Design – Basics for Interpretation: IN-CLASS GROUP ASSIGNMENTS/PRESENTATION PREP		Dr. G. Smith
10/7-Th	16 QUIZ-2	LIVE	Study Design – Basics for Interpretation: GROUP PRESENTATIONS QUIZ-2 (Covers Lectures 13,14, and HON PRINCIPLES)		Dr. G. Smith
10/12-Tu	17	ASYNC	Evidence-based Resources – Guidelines/Reviews/EBM EXERCISE-8	8	Dr. G. Smith
10/14-Th	18	LIVE	Search Strategies –DIQ Scenarios EXERCISE-9		Dr. G. Smith
END OF EXAM II: OSDIE MATERIAL - Covers Exercises 6-9, AND concepts from Lectures 14,15,16					
10/19-Tu	19	LIVE	OSDIE-2 Prep		Dr. G. Smith
10/21-Th	---	LIVE	****EXAM II: OSDIE (100pts)****		
BEGIN FINAL EXAM MATERIAL – Covering Lectures: 20-23,27,28					
10/26-Tu	20	LIVE	Statistics		Dr. Baggarly
10/28-Th	21	LIVE	Statistics		Dr. Baggarly
11/2-Tu	22	LIVE	Statistics		Dr. Baggarly
11/4-Th	23	LIVE	Statistics		Dr. Baggarly
11/9-Tu	24	ASYNC	Required: Read Ch. 13: Pharmacy and Therapeutics Committee (follow objectives and practice questions to prepare for QUIZ-3)	13	Dr. G. Smith
11/11-Th	25	ASYNC	Required: Read Ch. 14: Drug Evaluation Monographs (follow objectives and practice questions to prepare for QUIZ-3)	14	Dr. G. Smith
11/16-Tu	26 QUIZ-3	ASYNC	Required: Read Ch. 21: Investigational Drugs (follow objectives and practice questions to prepare for QUIZ-3) QUIZ-3 (Covers Lectures 24,25,26)	21	Dr. G. Smith
11/18-Th	27	ASYNC	Informatics		Dr. Donald
11/23-Tu	28	LIVE	Medication Misadventures		Dr. Donald
11/30-Tu		LIVE	****FINAL EXAM (60pts)**** 10am-12pm		