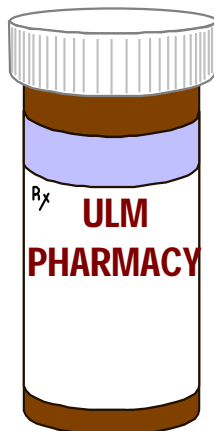


**PHAR 400**

**MEDICAL MICROBIOLOGY**



**Contact Information**

**PROFESSOR OF RECORD:** Benny L. Blaylock, Ph.D.

**OFFICE:** Bienville 102E

**TELEPHONE:** 342-1696

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**OFFICE HOURS:** Monday through Friday from 7:30 A.M. to 5:00 P.M. except during class and/or lab instruction time. It is best to make an appointment through the Dean's office secretary or directly with me, but feel free to stop by at your convenience.

**PROFESSORS:** Ronda Akins, Pharm.D.  
Bienville 393; Shreveport 114  
[akins@ulm.edu](mailto:akins@ulm.edu)  
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Bienville 362  
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342-1747

**Course Prerequisites/Corequisites**

**Prerequisite** – P1 standing

**Course Description**

Discussion of bacterial, viral, fungal and parasitic pathogens and the diseases they cause. Topics include microbial structure, physiology and genetics, virulence factors and mechanisms of tissue damage.

## **Course Objectives and Outcomes**

The objectives of this course are:

- a. Introduce the pharmacy student to the concepts of medical microbiology.
- b. Describe the organisms responsible for infectious disease and their virulence mechanisms
- c. Develop an understanding of infectious disease pathogenesis and potential antibiotic treatment and preventions.

The outcomes are based on the ULM College of Pharmacy 2006 Competency Statements/Educational Outcomes

Outcome: Provide Comprehensive Patient Specific Pharmaceutical Care

- A.a. – Analyze the prescription regarding the medication, dose, delivery form and duration of use as being appropriate for the patient and disease state
- A.g. – Identify and collect pertinent information from the medical chart, database and/or the patient/caregiver interview
- A.j. – Recognize appropriate patient- and drug-specific factors that will impact the drug regimen
- A.m. – Analyze and interpret information gathered to identify any drug-related problem
- A.n. – Assess the prescription for interaction potential, including interactions with other medications (both prescription and non-prescription), disease states, foods and herbals

## **Course Topics**

Bacterial Classification, Morphology and Cell Structure

Bacterial Metabolism

Bacterial Genetics

Mechanisms of Bacterial Pathogenesis

The Gram-Positive Cocci

The Gram-Positive Bacilli

The Gram-Negative Cocci and Anaerobic Bacilli

The Gram-Negative Aerobic Bacilli

Actinomyces, Mycobacteria and Mycoplasmas

Spirochete, Rickettsial and Chlamydial Pathogens

Sterilization, Disinfection and Antisepsis

Antimicrobial Agents

Transmission of Infectious Microbial Diseases

Viral Classification, Structure and Replication

Mechanisms of Viral Pathogenesis

Pspillomviruses, Polyomaviruses, Adenoviruses and Poxviruses

Herpesviruses and Picornaviruses

Parvoviruses, Paramyxoviruses, Orthoviruses and Reoviruses

Rhabdoviruses, Togaviruses and Bunyaviruses

Hepatitis Viruses, Retroviruses, Miscellaneous Viruses and Prions

Basic Biology of Fungi

Superficial, Cutaneous and Subcutaneous Mycoses

Systemic and Opportunistic Mycoses

Basic Biology of Parasites

Protozoan Parasites

Helminth Parasites

### **Instructional Methods and Activities**

All of Dr. Blaylock's lectures will be in the PowerPoint presentation format. Not all pictures, illustrations, etc are from your textbook. I reserve the right to use any of the above from any source to enhance a point in the lecture. If a picture, illustration, etc. is used on an exam, the student will be able to access it either in the text or online through Moodle. An outline form of each lecture will be placed on the ULM Moodle website. Moodle may be accessed by going to the ULM homepage ([www.ulm.edu](http://www.ulm.edu)) and clicking on Moodle under "Quickly Link To".

It is highly recommended that students access this information prior to coming to each lecture. Each outline contains the information on each of the slides to be presented in lecture. Time will not be allotted for transcription of the slides to notes during class.

### **Evaluation and Grade Assignment**

There are three (3) major exams plus the final exam planned for this course. At the discretion of the professor, there may also be smaller, unannounced "pop" quizzes. For the major exams, students must sign the test booklet honor code as well as the answer sheet and return both to the professor at the end of the testing period. Any answer sheets not accompanied by a signed test booklet will not be graded. In addition, students may not, under any circumstance, leave the room with a test booklet. All students must have their ULM ID cards out on the desk when they receive the exam. In addition, cell phones, notes or

anything other than the exam booklet, answer sheet and any provided paper cannot be on the desk or used in any way during the exam.

I do not return exams to students. I will be happy to review exam performance with any student. In this way, the student not only learns the correct answer to a question but the reason why the question was incorrectly answered. Hopefully, this will be a learning experience. Exams will be graded within one week of the exam date and scores posted on Moodle. Scores on Moodle are for student access only and are not considered the official grades. The official grades reside on Dr. Blaylock's computer in an Excel spreadsheet. Students wishing to review an exam will have a maximum of two weeks in which to come to the professor's office and review the exam. The two-week review period starts the day after the exam. During a review session, students may not make copies or transcribe any information from the exams.

The first three major exams will be 100-point exams. The final examination will be a minimum of 150 points with the first 100 points over new material and a minimum of 50 points comprehensive over major points covered during the semester. Question format for all exams and quizzes may be multiple choice, short answer (fill in the blank), true or false, short discussion or a combination of these question types. I reserve the right to use any question format that fits the exam needs.

The grading scale is as follows:

A = 90 - 100%

B = 80 - 89%

C = 70 - 79%

D = 60 - 69%

F = <60%

Scores are rounded up (example - 89.5 = 90; 89.4 = 89)

Only one (1) decimal place is used. There is **no curve**. I will be more than happy to give all "A's".

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.

## **Class Policies and Procedures**

**TEXTBOOK:** Medical Microbiology, 6<sup>th</sup> edition (Murray, P.R., Tenover, M.A. and Tenover, K.S., eds.). The textbook is a requirement for the course. Students will be responsible for material in the text assigned by the professor.

**ATTENDANCE POLICY:** For exams, quizzes and papers, students are responsible for material contained in all required reading, handout and lecture materials and homework. Students are responsible for all assigned reading materials whether or not they are covered in lecture.

Class attendance is required and encouraged. Attending Pharmacy School is a privilege and should be treated as invaluable training for the student's career.

Students disruptive to the classroom environment will be asked to leave the class, and their behavior will be reported to The Dean of Student Affairs for the University of Louisiana at Monroe.

Cell phones must be turned off and stored during class and exams.

If a student cannot attend an exam, **ADVANCE NOTICE MUST BE GIVEN** to the instructor. If the student has a University approved excuse for missing the exam, one opportunity will be given for a **make-up exam** (scheduled on the day the student returns to class). Failure to attend a scheduled make-up will result in a grade of zero (0) for that exam. Make-up exams will be prepared at a similar level of difficulty and may be given as a written exam (not necessarily the same format as the original) or an oral exam.

Quizzes will be given during the first 10 minutes of class. Tardy students will not be given extra time to complete the quizzes. Students not returning quizzes immediately after being requested to do so will be given a grade of zero (0) for that quiz (i.e. late quizzes will be given a grade of zero (0)).

No make-up exams or quizzes will be given after final exams start (May 5, 2008).

**ACADEMIC INTEGRITY:** Students must observe the ULM published policy on Academic dishonesty (See Page 4 in the ULM *Student Policy Manual*: <http://www.ulm.edu/studentpolicy/>).

In addition, students must observe the ULM College of Pharmacy Code of Ethical and Professional Conduct (<http://rxweb.ulm.edu/pharmacy/policies/copcodeofconduct.pdf>) and the Dress Code (<http://rxweb.ulm.edu/pharmacy/studentinfo/default.htm>)

**COURSE EVALUATION POLICY:** At a minimum, students are expected to complete the on-line course evaluation as well as any evaluation administered in class by the College of Pharmacy.

**STUDENT SERVICES:** 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/>

**FIRE EMERGENCY PLAN:** Please check the emergency escape plan by the door of the classroom. Move quickly and orderly to the appropriate stair well and exit outside the building. **Under no circumstance is the elevator to be used for emergency fire evacuation.** Any student needing assistance with the stairs should notify the professor.



**TENTATIVE COURSE SCHEDULE  
PHRD 400**

**MEDICAL MICROBIOLOGY**

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**The chapters in parenthesis for each topic are reading assignments. It is expected that the student will read each of these assignments, preferably before the topic is presented in class. In any event, the student is responsible for the material in each reading assignment.**

<b>LECTURE</b>	<b>Date</b>
1. Introduction to the course, History of Microbiology (1)	8-24 Blaylock
2. Bacterial Classification, Morphology and Cell Structure (2)	8-25 Blaylock
3. Bacterial Metabolism and Growth (3)	8-26 Blaylock
4. Bacterial Genetics (3)	8-27 Blaylock
5. Mechanisms of Bacterial Pathogenesis (18)	8-31 Blaylock
6. <i>Clostridium</i> (39)	9-1 Blaylock
7. <i>Staphylococcus</i> , (21)	9-2 Akins
8. <i>Neisseria</i> (29)	9-3 Blaylock
9. <i>Streptococcus</i> , <i>Enterococcus</i> (22,23)	9-8 Akins
10. <i>Bacillus</i> , <i>Listeria</i> , <i>Corynebacterium</i> , <i>Erysipelothrix</i> (24-26)	9-9 Blaylock
<b><u>EXAM 1</u></b>	<b><u>9-10</u></b>
11. <i>Bacteroides</i> and misc. anaerobes (40-41)	9-14 Blaylock

12. Enterobacteriaceae (30)	9-15	Blaylock
13. Enterobacteriaceae (30)	9-16	Blaylock
14. <i>Vibrio, Aeromonas, Campylobacter, Helicobacter</i> (31, 32)	9-17	Blaylock
15. <i>Hemophilus, Pasteurella</i> and <i>Bordetella</i> (34, 35)	9-21	Blaylock
16. <i>Pseudomonas</i> (33)	9-22	Akins
17. <i>Brucella, Legionella, Francisella</i> (36, 37)	9-23	Blaylock
18. <i>Mycobacterium, Actinomyces, Nocardia, Mycoplasma</i> (27,28,40, 43)	9-24	Blaylock
19. <i>Chlamydia, Rickettsia</i> (44, 46)	9-28	Blaylock
20. <i>Treponema, Borrelia, Leptospira</i> (42)	9-29	Blaylock
21. Sterilization, Disinfection and Antisepsis (8)	9-30	Blaylock
<b><u>EXAM 2</u></b>	<b><u>10-1</u></b>	
22. Antimicrobial Agents (20)	10-5	Akins
23. Antimicrobial Agents (20)	10-6	Akins
24. Viral Classification, Structure and Replication (4)	10-7	Hsia
25. Mechanisms of Viral Pathogenesis (48)	10-8	Hsia
26. Papillomviruses, Polyomaviruses, Adenoviruses, Poxviruses (51,52, 54)	10-12	Hsia
27. Togaviruses and Flaviviruses (62)	10-13	Blaylock
28. Parvoviruses, Paramyxoviruses, Orthoviruses, Reoviruses (55, 58,59,61)	10-14	Blaylock
29. Herpesviruses and Picornaviruses (53, 56)	10-15	Hsia
30. Rhabdoviruses, Arenaviruses and Bunyaviruses (60, 63)	10-19	Blaylock
31. Hepatitis Viruses, Retroviruses, Misc. Viruses and Prions (64, 65, 66)	10-20	Hsia
<b><u>EXAM 3</u></b>	<b><u>10-21</u></b>	
32. Fungal Classification, Structure and Replication (5)	10-22	Blaylock
33. Superficial, Cutaneous and Subcutaneous Mycoses (71, 72)	10-27	Blaylock
34. Systemic and Opportunistic Mycoses (73, 74)	10-28	Akins
35. Parasite Classification, Structure and Replication (6)	10-29	Blaylock

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|--|------|----------|
| 36. Tissue Protozoan Parasites (81, 82)          | 11-2 | Blaylock |
| 37. Blood-borne Protozoan Parasites (82)         | 11-3 | Blaylock |
| 38. Helminths (Trematodes and Cestodes) (84, 85) | 11-4 | Blaylock |
| 39. Helminths (Nematodes) (83)                   | 11-5 | Blaylock |

**FINAL EXAM**

**TO BE SCHEDULED BY  
OFFICE OF ACADEMIC AFFAIRS**

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