

**BIOLOGY 347**  
**SECTIONS 01, 02, 03, AND 04**  
**GENERAL MICROBIOLOGY**  
**4 CREDIT HOURS**  
**FALL 2007**

**LECTURE 9:00-9:50 AM, MWF, LEE DRAIN BLD, RM 216**

**LAB SECTION 02 MON NOON-2:50 PM, LDB 119D**

**LAB SECTION 01 MON 3:00-5:50 PM, LDB 119D**

**LAB SECTION 03 WED NOON-2:50 PM, LDB 119D**

**LAB SECTION 04 WED 3:00-5:50 PM, LDB 119D**

**Course Instructor:** Todd P. Primm, Ph.D.  
Department of Biological Sciences  
Office in LDB 127, phone 294-3817, email tprimm@shsu.edu  
Office Hours are Mon and Wed 10am-noon or by appointment (best)  
Email is the surest way to reach me to set an appointment

**About me:** I attended Atlanta High School in Atlanta, Texas, close to Texarkana. I received a Bachelor of Science in Biochemistry from Texas A&M University, then earned a Ph.D. in Biochemistry from Baylor College of Medicine in Houston. I did a three-year postdoctoral fellowship at the National Institutes of Health, in Bethesda, Maryland working on tuberculosis, then taught for 5 years at UTEP. My research is focused on antimicrobial drug discovery and physiology of mycobacteria during stress survival, especially dormancy. My lab also studies microbial ecology (and you contribute to this in lab). This is my third year at Sam Houston State University.

**Course Description:** This required majors course provides broad exposure to the field of Microbiology, focusing mainly on bacteriology. The major topics include growth of microorganisms, bacterial structure, physiology, and biochemistry, along with infections, treatments, and basic immunology. The laboratory component will teach the basics of culture and identification of bacteria, and microbial ecology, with a very active format. Also included will be some exposure to environmental microbiology, public health, and virology.

**Course objectives:**

1. learn the major terms and concepts of microbiology
2. understand the major structures in bacteria and their functions
3. gain a working understanding of bacterial physiology and morphology
4. understand the basics of medical microbiology
5. acquire basic laboratory skills in microbiology, especially bacterial identification

My approach in science education is concept-based learning, as opposed to memorizing a large volume of facts. There are several reasons for this. First, a number of those “facts” will be altered, eliminated, or replaced within the next decade. As new discoveries occur, it is the nature of science to alter our understanding. Thus, you are not learning exactly how a cell works, you are learning our current understanding of how a cell works, which will inevitably change over

time and be improved. Second, if you just memorize a bunch of details, you will forget most of it quickly unless you use that knowledge somehow. Third, in the rapidly advancing field of microbiology, you will encounter a large volume of new information in the future. If you have a strong grasp of the basic concepts of the field, then you can fit these new ideas into your web of knowledge. While a number of basic facts and terms must be memorized, we will focus on learning and applying major concepts in this course.

**Required Course Text:** *Microbiology: An Introduction*, 9<sup>th</sup> Ed., Tortora, et al., Benjamin Cummings. This text should come with a Scientific American reader (you have to buy this separately if you only have the textbook), the bundle is available from the on-campus B&N bookstore in the LSC. *General Microbiology 347 Laboratory Manual*, Todd P. Primm, Harold Foerster & James W. Spurlin, Sam Houston State University, is available from the Biology main office, LDB room 300 (bright yellow cover).

**Attendance Policy:** As a University faculty member, I will provide my knowledge and expertise and try to give a supportive educational environment. As University students, I expect you to behave professionally (cell phones off in class, prompt attendance, respect to other students, etc). Exam material is primarily from lectures and in-class discussions, thus if you miss class you will suffer. If something does cause you to miss class, then I expect you to be proactive and obtain lecture notes from a trusted colleague. If you miss an exam without notifying me in advance I do not provide a makeup. If you do notify me in advance (at least 24 hrs) and provide verification, and I accept your absence (official University activity or medical), then I reserve the right to give oral exams for makeup. I want you to learn and enjoy this course, however, that decision is up to you. The more you put in, the more you get out.

**How to do well:** With an intense science course such as this, you must study and keep up as you go along. Studying the day before the exam only is inadequate. You must read the book before lecture, take notes in lecture, and go over those notes after lecture, preferably with a study group. In lecture and with class discussion, I assume that you have read the textbook. If my lectures seem too fast or “over your head,” then read the text. My job is not to discuss every detail in the textbook, but instead to explain the important concepts clearly. Make outlines of chapters in the book, we will do some examples as part of the course.

**Course evaluation:** This course has two components, lecture and lab.

LAB 30% weekly quizzes + 30% midterm (comprehensive quiz) + 30% final project (written report over metaproject) + 10% peer evaluation (your MetaProject lab partner grades you on participation)

LECTURE and COURSE lab total is 30% + 15% from each of four lecture exams (60% total) + 10% for lecture projects and reading quizzes

No grades are dropped or curved, you get exactly what you earn. There will be reading quizzes given at my discretion at the start of class and online before class on the assigned textbook readings. There will be 6-10 take home projects, given to enhance understanding of lecture topics. Projects are graded on a 1-10 scale. Course grade is the typical breakdown of A (100-90%), B (89-80%), C (79-70%), D (69-60%), or F (59% and below).

For official University guidelines and policies related to students with disabilities, academic dishonesty, visitors in the classroom, and religious holidays, see <http://www.shsu.edu/syllabus/>

### **Course Calendar:**

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The course schedule will be on Blackboard, updated daily. The material listed on a date is the subject covered during that class period. Read the assigned material **before** the class (subject to quiz).

### **Study Groups**

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For some of the projects, group work is not only allowed but encouraged. Studying for exams is also often more effective in small group settings. List below the names, phone numbers, and email contact information for potential study partners.

NAME: \_\_\_\_\_

PHONE: \_\_\_\_\_

EMAIL: \_\_\_\_\_

NAME: \_\_\_\_\_

PHONE: \_\_\_\_\_

EMAIL: \_\_\_\_\_

NAME: \_\_\_\_\_

PHONE: \_\_\_\_\_

EMAIL: \_\_\_\_\_

### **Advice for success:**

- ✓ Listen carefully in class and take extensive notes. Organize the notes when you get home, that same day if possible when the material is fresh in your mind. If you have trouble listening, then record the lecture and listen again later.
- ✓ Whenever possible, ask questions in class.

- ✓ Join a study group with other motivated students. You can teach each other and learn from each other. With different backgrounds, you can fill in the gaps in each other's knowledge.
- ✓ Read the textbook carefully, not like you read a newspaper. Make an outline of the chapter, note important terms, and summarize sections in your own words. This will not only prepare you for the quizzes, but dramatically enhance your learning from the textbook, which was specifically selected for students with little microbiology background.
- ✓ Study in advance with your group, don't cram. Even if you manage to obtain a decent grade, information crammed in at the last minute usually is lost fast from memory. Since the concepts in this course naturally are comprehensive and build on each other, that would be bad.
- ✓ Join the online study session before each exam. Study in advance, then use the online session to ask any last questions or clear up any misconceptions.

Please fill this page out, separate it from the rest of the syllabus, and return it to me at the end of the first period.

NAME:

FUTURE GOALS (career and personal, i.e. go to med school):

WHAT IS THE MAJOR ISSUE YOU WISH TO LEARN FROM THIS CLASS?

I have read and understand the class syllabus, and agree to fulfill all my responsibilities as a student. I agree that any materials I generate for this class can be used by SHSU for purposes related to education and assessment.

Signed \_\_\_\_\_