

# MICROBIOLOGY FOR THE HEALTH SCIENCES

## GENERAL INFORMATION Spring, 2007

### COURSE ITEMS

- TITLE & CREDIT:** Biol – 251, Microbiology for the Health Sciences. Lecture, 3 semester credits, no lab.
- DESCRIPTION:** This course will survey both general and medical microbiology. It will emphasize medical microbiology and place it in perspective with the whole of human health. This class is not a course in clinical microbiology, and will not be used to substitute for a course that covers in detail the signs, symptoms, diagnosis and treatment of infectious diseases.
- OBJECTIVES:** This course is likely your first exposure to microbiology, but hopefully not your last. Therefore, we will use our time to emphasize the important foundation concepts that will later allow you to use and apply microbiological principles whenever necessary. I will present many meaningful, applicable details and examples of the interactions of microorganisms and humans. Unfortunately, most of the interactions that we study in this course are the harmful ones.
- PREREQUISITES:** Students taking this course should have already completed a basic biology course (e.g. Bio 101) and a basic chemistry course (e.g. Chem 104 & 106), OR, Anatomy and Physiology. Microbiology is not an entry-level course and students taking this course without doing well in the recommended prerequisites often do poorly. If you are at all deficient in Chemistry, then I strongly recommend you review Chapter 2 in your text on your own.
- FORMAT:** This course will be conducted in a manner somewhat like a typical science class. However, I will provide you with detailed reading assignments before class, and you should plan to do that reading before class. I will lecture as necessary, but you are encouraged to ask questions about your readings. Attendance at lectures is essentially required (but I do not take roll) and you will be expected to participate in class activities. I would rather talk with you than lecture at you. Tape recording of lectures (without medical justification *and* my approval) is absolutely prohibited!
- I recommend you come to class fully prepared for each discussion by taking modest notes, and reviewing your notes using your class outline and your text as guidelines. Material for examinations will be taken primarily from class lecture/discussion activities.
- CLASS MEETINGS:** 11:40 am - 12:40 pm, MWF, LA 205.  
Eating and drinking is not permitted in this classroom, and we will abide by this restriction.

### INSTRUCTOR ITEMS

- INSTRUCTOR:** Michael Dennis  
Phone and voice mail: 657.2016  
Office: Science Room 136  
Email: mdennis@msubillings.edu  
I attempt to answer voice mail and email messages as promptly as I can.  
Home Page: [www.msubillings.edu/sciencefaculty/dennis/](http://www.msubillings.edu/sciencefaculty/dennis/)  
You will use this address to access online all course materials including:  
Reading Guidelines and Lecture Outlines
- OFFICE HOURS:** MWF: 8:30-9:00 am & 10:30-11:30 am..  
Other hours by appointment, or whenever you can catch me in my office.
- CONSULTATIONS:** I encourage you to visit with me often to keep track of your progress in class. Although it is your responsibility to monitor your own progress, I will keep you advised of your status (via cumulative letter grade estimates on your exams and if you ask. I am willing to discuss your daily work, exams, preparation for class, or any items you wish. Just stop in to see me,

## EVALUATION ITEMS

### PROBLEMS:

There may be written questions that will be answered in class and that will be graded. These will be unannounced and are designed to enhance attendance and ensure you keep up with your microbiology on a daily basis. These will be graded for credit and will be part of your interim exam scores. If you miss class these cannot be made up: No excuses.

### EXAMS:

There will be four interim examinations, three 1-hour exams given during class periods. Exam#4 will be part of the final exam. Exams will be worth approximately 40-80 points each, but not necessarily all will be worth the same credit.

There will be a Comprehensive Final Exam worth approximately 120 pts.

### ASSESSMENT:

You have two ways to earn your final grade in this course:

- 1 - Grade based entirely on the comprehensive final examination.
- 2 - Grade based on interim exams and the final.

Please note that I will give you the highest grade you earn by either of the methods. I usually 'curve' grades, but use of a curve is at my discretion and the curve for the two grading methods may differ. I will likely include a significant curve for method 2. (i.e. I prefer consistency and will reward a student who does well on all exams.) There is no fixed grade scale: Final grades are determined at my discretion. You are encouraged to consult with me about your grade whenever you wish. I am willing to give you an approximation of your grade whenever you ask. However, final grades can be determined only after the course has been completed and I have thoroughly evaluated all work for all students.

Remember the words of the famous philosopher Yogi Berra:  
"Predicting things is hard, especially about the future."

The percent of past students earning a particular grade is as follows:

A=20%    B=30%    C=30%    D=10%    F=10%

Passing this class may be hard work, but it is clearly possible.

### STANDARDS:

My interpretation of the university grading scale is as follows:

A = Excellent	Thorough understanding of all major concepts; and, concepts supported by extensive details.
B = Good	Thorough understanding of most major concepts; and, concepts minimally supported by details.
C = Average	General understanding of most major concepts; but, deficiency of, or errors in, many details.
D = Poor	Weak grasp of even major concepts; or, extensive errors in concepts and details.
F = Failure	Weak grasp of concepts and many errors in details; or, Academic Misconduct.

Use of + or – grades with the letter grades is at my discretion.

**ACADEMIC HONESTY:** It is your responsibility to familiarize yourself with the Student Affairs Handbook (in particular Part X, B.1, Academic Misconduct). All students are expected to adhere to the highest standards of academic honesty and refrain from any action which is dishonorable or unethical. In all exams, daily work, preparation of notebooks, etc., students are expected to prepare/submit their own work entirely. Any cheating or alleged cheating or unethical conduct in this class will result in a grade of 'F' for the course. I am the final judge for determining cheating and grades.

## STUDENT ITEMS

### TEXT:

*Microbiology*, Nester et al, 5e, 2007 (or any recent micro text). The purchase of a textbook is required. It is essential that you have your own book and that you use it well. It is difficult, maybe impossible, to fully comprehend and appreciate the breadth, complexity and depth of microbiology without using a good text. I believe the assigned text is a good one. You may use another text if you have one, but you are then responsible for making adjustments to the reading guidelines that I provide for you.

- DISABILITIES:** Students with disabilities should contact Disability Support Services and me so that appropriate accommodations can be made as quickly as possible.
- BEHAVIOR:** Attendance is expected, but I do not take roll. Please be respectful of your peers and do not disrupt class with poor social behaviors (e.g. turn off the cell phones, do not come to class late or leave early on a regular basis, do not prepare to leave class until class is complete).
- READING GUIDE:** Use the following as a guide for the intensity of your reading effort:
- Read very carefully* = Read and study hard, even the details. The material is very important and fundamental to basic microbiology.
  - Read carefully* = Read and study well, even the details. The material is important and will be used at later times in the course.
  - Read* = Read and understand the concepts well. The concepts are important but the excessive details are not worth memorizing.
  - Review* = Read for background and perspective. The material is valuable, by providing insight, but it is not essential to 'study' it.
  - Summarize* = Read superficially if time permits. The material is interesting or informative, but may not be covered in class.
  - Skip* = We will not cover this in class.
- EXPECTATIONS:** You will be expected to prepare for daily classes and actively participate in class discussions. Each class period should require 3 hours of preparation time, about 1 hour of which should be before class starts. If you are spending more than 1 hour in advance of class or 3 hours more total you may be trying to do too much! You will be constantly making decisions about what to study, and to what degree. Frankly, that is what I expect you to do.
- There will be interim exams and a comprehensive final. Missed exams cannot be made up. Accommodations will be made when a legitimate excuse preclude taking an exam. (Calling the morning of an exam complaining of illness is not a legitimate excuse.) The final exam will be given only at the scheduled time. The final exam will be challenging: I strongly recommend you keep up with discussions and reading from the text rather than try to "cram". There is no additional extra credit available and no exams will be dropped. You must take all exams and the final. Because it is in your best interest, I recommend that you try to do well in all aspects of this course, which includes taking exams on schedule.
- RESPONSIBILITY:** "Education is not a guarantee. It is an opportunity."  
 "Education is not received. It is achieved."  
 "Education is a guide. Knowledge is the goal."
- I have no idea who made the above statements, but I believe them. You are here for the opportunity to learn microbiology as it relates to biomedicine. My role is to guide you through the large volume of information that makes up microbiology, and your role is to achieve usable understanding of the important concepts, details and perspectives. You achieve the understanding by way of your own efforts. Knowledge, however, is what you need to survive as professionals in the challenging and rapidly changing world of contemporary biomedicine
- I expect you to become an active participant in the learning process. Passive learning (i.e. cramming for exams) works only for short-term memorization and will not benefit you when you actually need to use microbiology as an advanced student or as a professional. I am responsible for guiding you and helping you achieve the goals you set for yourself. You are ultimately responsible for how far your progress in the class.
- The content of this course is not established entirely by me. In fact, the course content (as well as the expected outcomes) is a recommended curriculum designed by a working group of the undergraduate microbiology education members of the American Society of Microbiology. I have participated in the course curriculum design as a member (for 35 years) of the American Society of Microbiology. ASM is the oldest and largest discipline-specific professional science organization in the world.

RECOMMENDATIONS: In this course, competency and academic growth are as important as the ability to do well on an exam. Grading is therefore based on demonstration of competency. To do well you must be disciplined and willing to be thoughtful and expressive. Your continued enrollment in the course constitutes your understanding and acceptance that grades will be determined at the discretion of the instructor.

I recommend you proceed as follows:

- Prepare for class sessions a day (or more) in advance of class.
- Prepare by reading the assigned material using the guidelines provided.
- Prepare a notebook of your work (i.e. class notes).
  
- Come to class ready to listen...not to take notes.
- Come to class ready to think...not to be lectured to.
- Come to class with answers...not just questions.