

GENERAL MICROBIOLOGY

Fall, 2009

GENERAL INFORMATION

COURSE ITEMS

TITLE & CREDIT: Biol 340. General Microbiology. (3 semester credits).
Biol 350. General Microbiology Lab. (1 semester credit).

DESCRIPTION: Microbiology is the study of microscopic organisms. This course will cover the broad scope of contemporary microbiology. We will study the biology of microorganisms, and the interactions of microorganisms with other organisms, including humans. We will spend most of our time discussing general principles of microbiology (microbial anatomy, physiology, growth and genetics). We will then survey applied microbiology (environmental and industrial microbiology). We will finish with a discussion of some of the major infectious diseases caused by microorganisms.

OBJECTIVES: We will investigate, in a rigorous but relaxed academic environment, the discipline of microbiology. The course will be presented from the perspective of microbiology as an integral sub-discipline of biology. We will emphasize viruses and procaryotic organisms, especially how their biology differs from the eucaryotic organisms that you have studied more extensively. The course will provide meaningful, applicable examples of the interactions (beneficial and harmful) of microorganisms with people and the environment.

PREREQUISITES: Ideally, you are a senior biology major who has completed courses in genetics, biochemistry and molecular biology. Minimally, you are a junior or senior biology major (or chemistry minor) and have completed 2 full years of biology and chemistry courses including cell biology (but be prepared to study a bit of cellular metabolism and genetics on your own). Sophomores or students deficient in cell biology, genetics or chemistry are not qualified for enrollment. This course is offered every year in fall. Students interested exclusively in microbiology as a prerequisite for professional programs (e.g. nursing, pharmacy, physical therapy etc) should consider taking Biol 251-Microbiology for the Health Sciences, that is offered every spring.

FORMAT: Sessions will be conducted as class discussions, rather than formal lectures. Reading assignments will be made and material will be discussed in class. I will give you outlines to follow to guide you in your reading. You are expected to do the assigned reading and be prepared for daily discussions. Attendance and active participation are essential components of this course. Some absences are understandable, but attendance is a significant factor in your overall grade.

CLASS MEETINGS: Lecture: MWF, 9:20-10:20 am, COE 423. Lab: W, 2:30-5:50 pm, Sci 123.

INSTRUCTOR ITEMS

INSTRUCTOR: Michael Dennis Office: Sci 136
Phone and voice mail: 657-2016 E-mail: mdennis@msubillings.edu
Home Page: www.msubillings.edu/ScienceFaculty/Dennis/

OFFICE HOURS: MW: 10:30-11:30 AM. Sci 136.
Other hours by appointment and whenever you can catch me in my office.

CONSULTATIONS: I encourage you to visit with me to keep track of your progress in class. It is your responsibility to monitor your own progress, but I will keep you advised of your status if you ask or request a meeting to discuss my assessment of your grade.

EVALUATION ITEMS

PROBLEMS:

There may be a daily problem/question that is to be solved in class, and that will be graded. These are designed to ensure that you keep up with the subject on a daily basis. These problems are also one (important) basis for your grade!

EXAMS:

The precise examination strategy will depend on the size of our class. There may be written examinations (a midterm and final). There may be individual oral examinations: a 20-30 minute midterm and a 60 minute final. The midterm is basically a reality check of your progress in class; the final is a very important part of your grade. It is virtually impossible to study ("cram") for these exams. To do well you must keep up with your studies on a daily basis!

ASSIGNMENTS:

We may read papers from the literature (if time permits). You will be expected to prepare a 1-page critique of each paper we read. Additional assignments may be made at my discretion.

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 = Unacceptable	Weak grasp of even major concepts; or, extensive errors in concepts and details
F = Failure	Weak grasp of concepts and many factual errors.

The use of (+) or (-) grades to clarify borderline grades is at my discretion.

ASSESSMENT:

Biol 340 grades will be based on my subjective evaluation of your daily problems, preparation for and participation in daily discussions, assigned literature papers, and the examinations. Please note that you must earn an 'A' on the final exam to earn an 'A' for the course!

FINAL GRADES:

Final grades are based entirely on my assessment of your individual accomplishments and growth in this course. Your continued enrollment in this course means that you understand and accept my grading system.

ACADEMIC HONESTY: It is your responsibility to familiarize yourself with the Student Affairs Handbook (in particular Part IX, 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, papers, labs, etc., students are expected to submit their own work entirely. Cheating or alleged cheating in any manner will result in a grade of 'F' for the class.

CLASS ITEMS

TEXT:

Lecture - Required: Microbiology, 7e, 2008. Willey, Sherwood & Woolverton. Purchase and use of the text is essential. The Online version is acceptable (but I don't recommend it). See me if you plan on using the 6th edition of the text.

Laboratory - None. I will supply you with necessary lab handouts.

SCHEDULE:

I try to break the course up so that each 1 hour class period will take approximately 2-3 hours of preparation time. Use the reading guidelines wisely. We will do our best to keep to the Schedule of Events. Minor adjustments will no doubt have to be made. We will fall behind but we will still complete the entire course. Usually we end up with less than the scheduled amount of time to discuss microbial diseases. That's OK: this is primarily a course in the biology of microorganisms, and only secondarily a course in applied, environmental or medical microbiology.

READING GUIDE: Reading Assignments are found on my Web Page (online) by Session Number.
Use the following Guidelines for the degree of preparation for Reading Assignments:

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 details are not worth memorizing.

Review = Read for background and perspective. The material is valuable, it helps provide 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.

ATTENDANCE: Attendance and participation in lecture discussions is essential. I understand you may miss a lecture or two, even for a legitimate purpose, but you will receive no credit for lecture discussions or problems that you miss. Students missing class on "University Business" must communicate with me before missing class.

LABORATORY: Attendance in laboratory is mandatory. You will receive no credit for missed labs. Missed labs cannot be made up. The lab utilizes cultures, media and materials that are 'fresh' and available only during the lab period. A lab notebook is expected. Selected lab exercises may be "written up" and submitted for grading. You will also be responsible for conducting at least one independent project. Lab Handouts are found on my Web Page.

DISABILITIES: Students with disabilities should contact Disability Support Services so that appropriate accommodations can be made as quickly as possible.

SUMMARY

RECOMMENDATIONS: 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 (i.e. class notes) with your questions or problems.

- 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.

RESPONSIBILITY: In summary, I expect you to become an active participant in the learning process. You are responsible for your progress in this class, and I am responsible for guiding you through and helping you achieve the goals you set for yourself. You will enhance your learning by interacting with other students before and during class periods.

Lecture grades will be based on attentive attendance, demonstrated comprehension of reading assignments, and contributions to class discussions. Lab grades will be based on quality of lab work, quality of lab notebook, and quality of independent projects.

The bottom line is that, in this course, competency and academic growth are more important than just 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 of the syllabus (our contract) and that your grade will be determined at the discretion of the instructor based on your demonstration of intellectual competency.