

ABIO 330 MICROBIOLOGY Fall 2008 SYLLABUS

INSTRUCTOR: Dr. Garriet W. Smith, Rm. 203 Science Buld

LABORATORY ASSISTANTS: Maureen Holley, Audrey Hendley, Rm 204

COURSE LOCATION: Lecture, Rm. 327 SBDG, MW, 4:30-5:45
Laboratory, Rm. 213, SBDG, **Sec302 Th, 11:00AM-1:40**
Sec301 W 2:30PM- 5:10
Sec300 W 11:00AM- 1:40PM

TEXT: Microbiology, Willy et al. 7th ed.

LAB MANUAL: Holley and Smith. Specific Laboratory instructions will given during the start of the lab. DO not be late. The Manual only gives general guidelines and is not to be followed to the letter.

COURSE LEVEL AND CREDIT: 2nd to 3rd year Biology Major Level, 4 hours credit

STATEMENT FOR DISABLED STUDENTS: If you have a physical, psychological, and/or learning disability that might affect your performance in this class, please contact the Office of Disability Services, B&E 126, (803) 641-3609, as soon as possible. The Office of Disability Services will determine appropriate accommodations based on medical documentation.

ASSESSMENT OF STUDENT PERFORMANCE: Students will be assessed based on understanding of subject matter, ability to determine important concepts, proficiency in the laboratory and attitude. Regular tests will be given to determine understanding of subject matter; you must be there during tests since make-ups are not feasible. A comprehensive final exam will test your ability to retain the information and your ability to determine important concepts. Tests, mid-term and the final exam will count for 75% of the final grade. The remaining 25% is your laboratory grade. This grade consist of 15% (of the final grade) for the unknown write-up and 10% (also of the final grade) for proficiency and attitude. Be aware that this 10% is not for meeting every lab on time (although your grade will surely drop if you miss a lab, or are consistently late). It is your instructor's determination of your proficiency and attitude. This is determined by agreement among the instructors comparing all students with respect to their leadership roles in lab; how quickly and well techniques are mastered; and if their presence in lab was a help for other students and conducive to learning. Some students excel in laboratory conditions, some do not. Do your best.

COURSE GOALS: (1) To introduce students to modern microbiology. This includes current concepts of the evolution, phylogeny, genetics, metabolism and ecology of prokaryotic organisms.

(2) To introduce students to both classical and modern techniques. This will be done in three ways: through hands-on laboratory experiences; videos on technique shown in the lab; and during lectures.

(3) To introduce students to the applications of basic research in microbiology. Examples are given in the lectures on therapeutic products. antibiotics, pathogenics and immunology.

HINTS ON DOING WELL IN THIS COURSE: (1) Never miss a class or lab. (2) Take good notes during lecture. (3) If you have a question speak up in class, don't wait until after class. (4) Read the assigned material before class, don't wait until after the material is covered in class. (5) Rewrite your notes promptly after class using your text for more explanation. (6) Form nightly study groups and lecture to each other. This is very effective.

None of these guarantee a good grade, but if you do them all your chances are very good.

UNSEEN LIFE ON EARTH: As part of the American Society for Microbiology's Microbial Literacy Program, a series of videos will be shown during lecture times to insure a complete overview of the field. Questions from theses videos and the ensuing discussions may be included on tests.

SEQUENCE OF TOPICS

Topic	Text
. Cell structure and Function.	Chap. 3.
Laboratory: Introduction to the Microscope and Phase-Contrast Microscopy. View prepared slides.	Chap.2
..- Lecture: Microbial Growth and Nutrition.	Chap. 5 and 6
: Laboratory: Cellular and Colonial Morphology. View a variety of live bacteria on plates and under the microscope. Sterile technique. Spread and Streak plates from liquid cultures. Gram's stain.	Chap. 2
TEST. Metabolism 1	Chap.8
Laboratory: Standard Curve for growth measurements	Chap.5
Lecture: Metabolism 2	Chap.9; Appendix II
Laboratory: Bacterial Growth Curve 2, Growth Measurements.	Chap. 6
TEST. Lecture: Autotrophy.	Chap. 10
Laboratory: Dehydrogenase Assays. Isolation of Unknowns	
Lecture: Evolution and Diversity	Chap. 19.
Lecture: Phylogenetics	Chaps. 21&22
Laboratory: Biologs Unknown growth curve.	
TEST. Lecture: Microbial Interactions and Symbiosis	Chap. 30
Laboratory; Finish Unknowns, Write up papers in <i>Microbial Ecology</i> format.	Library
Pathogenesis.	Chap 33
Laboratory: Finish and Clean-up. Write-up due.	
FINAL EXAM Dec.9 5PM	
For all tests, including the final, bring a #2 pencil and the short scan-tron form.	