

GENERAL MICROBIOLOGY

Fall, 2009

LABORATORY SYLLABUS

COURSE ITEMS

Description: This lab introduces most of the basic techniques that are fundamental to typical microbiology laboratories. It is a techniques-intensive lab, but does not involve sophisticated instrumentation. Specific labs vary from standard exercises to analyses to identification procedures to actual experiments. You are expected to develop technical as well as evaluation skills.

Objectives: The labs are designed to support concepts and facts discussed in lecture. The skills you gain in this lab should also help prepare you for more detailed microbiology (as well as molecular biology and biochemistry) lab work.

Meeting: Wednesdays, 2:30 pm - ~5:50pm. Attendance is mandatory. Missed labs cannot be 'made up'.

EVALUATION ITEMS

Notebooks: You will keep a detailed lab notebook for every exercise/experiment/project. The notebook will include all observations, procedures, raw data collected, as well as a discussion of the experiment. You can complete the notebook during the lab period if you are efficient. It will be turned in at the end of the semester. Your notebook will be a major part of your lab grade. It will be impossible to earn an 'A' for the lab without a top quality lab notebook. Quality notebooks must be organized, logical, legible, with correct grammar and spelling. It will be easily read, and the information will be presented in a manner such that it will be easy to follow and understand what you did, what you observed/measured, and how you interpreted your work. The exact format of the notebook is up to you, but the format and presentation must be high quality to earn an 'A' for your work. One possible format: 1) Handout, 2) Lab notes, raw data and observations, 3) Carefully prepared tables, graphs, etc, and, 4) Discussion. It is also a good idea to include a Table of Contents at the beginning.

Assignments: I may require several labs to be 'written up' and to be turned in for grading. You will also conduct 1-2 independent projects: one project will be assigned by me, and a second may be required that you will design and conduct on your own.

Grading: Grades will be determined by the instructor and based on the following:

-Attendance and active participation:	~25%
-Techniques and quality and accuracy of data:	~25%
-Quality of lab notebook including data presentation and discussions:	~30%
-Quality of independent projects:	~20%
-Missed labs generally reduce your overall average by ~5%.	

Grades: Grades will be determined at my discretion. My standards for lab grades are as follows:

- A = Excellent quality lab work; thorough, clean notebook, and precise, well written reports; and, well conducted special projects. (>90%)
- B = Good lab work, thorough notebook and reports, completed special projects. (~80-90%)
- C = Active participation in lab, minimal notebook, reports and special project. (~70-80%)
- D = General incompetence in the lab. (~60-70%)
- F = Breaking any of the Safety Rules for the lab! Cheating, including plagiarism and copying information from other lab notebooks. (<60%)

OTHER ITEMS

Text: There is no formal lab manual. I will provide lab handouts for use in lab.

Schedule of Events:

9 Sep	Lab 1: Microscopy and Diversity	28	Lab 8: Microbial Genetics; Start Special Projects
16	Lab 2: Culture Techniques	4 Nov	Lab 9: Viruses
23	Lab 3: Staining Techniques	11	Holiday
30	Lab 4: Microbial Growth	18	Lab 10: Environmental Microbiology
7 Oct	Lab 5: Control of Microbial Growth	25	Holiday
14	Lab 6: Microbial Metabolism I	2 Dec	Lab 11: Food Microbiology
21	Lab 7: Microbial Metabolism II	9	Lab 12: Medical Micro; Finish Special Projects
21-28	Notebook review (Optional)	11 Dec	Notebooks and all special projects due