BIMM 121: Microbiology Laboratory
Winter 2011

Cindy Gustafson-Brown

Office: Humanities and Social Sciences 1145E
Phone: 534-4242
email: cgb@ucsd.edu (Put **BIMM121** in the subject line!)

Office hours: Tuesdays 11-noon

Lecture: Tuesday/Thursday 12:30 - 2 PM, Cog Sci Bldg 002

Labs: York 2310 and 2332
Tuesday/Thursday: 2:30 - 6:30 PM
Wednesday/Friday: 2:00 - 6:00 PM

Course Structure:
This course will introduce you to the fundamentals of microbiology and allow you to explore the many ways in which microbes affect and are used in our lives. We begin the course with a foundation in basic techniques such as sterile techniques, microscopy, methods of quantitating microbes, and preparing and examining stained slides. The remaining duration of the course will comprise four main units: a comprehensive look at bacterial physiology, understanding the complex microbial community of soil, metagenomics as a tool in exploring complex communities, and the use of microbes in various aspects of our lives. Each of these units comprises several multi-day experiments and there will be considerable overlap in the execution, methodology, and analysis of data from each of these units. Throughout the course, you will also receive training in accurate data entry and analysis, scientific reasoning, and in clear and concise scientific writing.

Equipment:
For this lab you will need to purchase:

- A lab notebook (carbons are not required);
- A lab coat;
- Sharpie markers;
- Eye protection (you may wear either safety glasses or goggles, but standard prescription eye glasses are not sufficient).

Attendance and Absences:

1. Your attendance is required at EVERY lab and through the entire lab period, until all the experimental work for the day is completed.
2. Absences will NOT be treated lightly. Your absence will place an unnecessary burden on your partner. There are no make up labs and you will not be allowed in the lab on non-lab days or in the other Micro lab sections, although you may be asked to make up the work from the day you missed.
3. Documentation will be required for all unavoidable absences.
4. If you are likely to have interviews for graduate school, etc., please schedule them on non-lab days.
5. All absences without prior notification/permission and the appropriate paperwork will be considered unauthorized.
6. **50-point penalty** for the first unauthorized, unexplained absence from the lab. If there is a second such absence, you will be asked to drop the course.
7. If you are ill on a lab day or have an emergency, e-mail or call (instructor or TA) before the start of the lab. If you are ill enough to miss lab you must go to the student health center and provide documentation of your illness.

Assignment Deadlines and Submission:

1. A hard copy of each lab report is due in the first 10 minutes of the lab period or the first 10 minutes of the lecture period of the day on which your report is due. Check with your instructor as to where the report should be turned in. Reports turned in more than 10 minutes after the start of class will be considered late. Penalty for late reports will be 10% for each day late.
2. In addition to the hard copy of the report, you are required to submit an electronic copy to Turnitin.com. A link to the e-submission website will be provided on WebCT. Failure to submit on Turnitin.com will results in 0 (zero points) recorded for that report. Check the deadline of the Turnitin.com submission and make sure you adhere to it. Students agree that by taking this course all required papers would be subject to review for textual similarity by Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the terms of use agreement posted on the Turnitin.com site.
3. Additional points will be taken for late electronic submissions.

Regrade Requests:

All regrade requests should be submitted in writing within one week of receiving the graded material.

Grading Scheme

Class work	Points
4 notebook checks at 5 points each	20 points
2 surveys at 10 points each	20 points
5 pop quizzes at 5 points each	25 points
Dilution assignment	10 points
Lab report 1	95 points
Lab report 2	95 points
Lab report 3	25 points
Lab and workshop participation	35 points
3 Midterms	175 points
Total	**500 points**

Possible extra assignments

If an extra assignment is given, either an exam or a report will have its point value correspondingly reduced.

- Transposon mutagenesis assignment
- Metagenomics assignment

Grade Distribution

A = 90% - 100%

B = 80% - 89.9%

C = 70% - 79.9%

D = 60% - 69.9%

F = below 60%

Notebook:

Spiral bound or composition notebook is OK. All notebooks should have a table of contents (handwritten OK) so on the first lab day leave several blank pages at the beginning of your notebook. Number your pages. Entries should be made in chronological order and EVERY day. Each day's entries on each experiment should begin with a brief (1 – 2 sentences) summary of work done on the same experiment the previous day.

How to use your notebook

Table of contents
Start a new page each day
    and for each experiment
For each experiment, include:
    Purpose of experiment
    Procedure
        Outline, or page from which protocol was taken
        Note any changes
        Note who did which part of the procedure
            – who inoculated controls, etc
        Note which organisms you used
            – name and species of the controls, etc
        Record any errors
    Observations
        Write
        Draw
        Questions and connections
    Conclusion or summary
    Answer any questions in the manual or that were raised in class.

Lab Performance and Participation

In addition to quizzes, midterms, lab reports and assignments, student evaluations will be based on the following criteria:

1. **Lab techniques and competence**
2. **Workshop participation**

Lab evaluations will be based on the following criteria:

1. Promptness
2. Pre-lab preparation
3. Careful management of lab procedures (e.g., sterile technique, proper waste disposal, experimental procedures, etc.)
4. Ability to adapt to unforeseen procedural changes
5. Caliber of thinking before asking questions
6. Scientific approach
    (e.g., proper use of notebooks, controls, experimental design)
7. Accuracy
8. Independence

9. Safety consciousness
10. General neatness in lab

Please note**: You will be expected to get into the habit of methodical, well-planned and organized work by the first exam. This will help you with the experiments in the remainder of the course.**

Course Website

This course is on WebCT (https://webctweb.ucsd.edu) and should automatically appear on your WebCT account as soon as you register for the class. We will use WebCT to post announcements, information on experiments, exams, schedules, readings and practice material, experimental data, report guidelines, etc. We strongly encourage you to use the Discussion board to post questions or answers to questions and to use it as a forum for exploring the material. The TAs and I will routinely check this website and answer any questions but feel free to respond as well. Please check the site regularly and update yourself on the information provided.

University Policy on Integrity of Scholarship

The principle of honesty must be upheld if the integrity of scholarship is to be maintained by an academic community. The University expects that both faculty and students will honor his principle and in so doing protect the validity of University grading. This means that all academic work will be done by the student to whom it is assigned, without unauthorized aid of any kind. Instructors, for their part, will exercise care in planning and supervising academic work, so that honest effort will be encouraged.

Student Responsibility:

Students are expected to complete the course in compliance with the instructor's standards. No student shall engage in any activity that involves attempting to receive a grade by means other than honest effort; for example:

- No student shall knowingly procure, provide, or accept any unauthorized material that contains questions or answers to any examination or assignment to be given at a subsequent time.
- No student shall complete, in part or in total, any examination, or assignment for another person.
- No student shall knowingly allow any examination or assignment to be completed, in part or in total, for himself or herself by another person.
- No student shall plagiarize or copy the work of another person and submit it as his or her own work.
- **If any work is plagiarized from that of another student, both students will be reported to the Office of Academic Integrity, even if one of the students has graduated already. Remember that most graduate schools check the undergraduate records for any indications of dishonesty before awarding a degree.**
- No student shall alter graded class assignments or examinations and then resubmit them for regrading.
- No student shall submit substantially the same material in more than one course without prior authorization.

Because all exams and reports are required for satisfactory completion of this course, any student caught cheating on an exam or report may be given a failing grade for the course.