

# **BIMM 121: Microbiology Laboratory**

## **Fall 2012**

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**Office hours:** Thursday, 11-noon, or by appointment

**Lecture:** Tu/Th 12:30-1:50, SEQUO 147

**Labs:** York 2310 and 2332 – Check which room you are in!  
Tu/Th 2:30-6:30

### **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 world. 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 (with carbons);
- A lab coat;
- A Sharpie marker;
- 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. If you are likely to have interviews for graduate school, please schedule them on non-lab days.
3. All absences without **PRIOR** approval of the instructor (not the TA) and the appropriate paperwork will be considered unauthorized.
4. 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.
5. Documentation will be required for all unavoidable absences. Provide this to your TA.
6. YOU MUST MEET WITH YOUR TA TO DISCUSS MISSED WORK. Once you have done this, email your instructor the date of the meeting.
7. **100-point penalty** for the first unauthorized, unexplained absence from the lab. If there is a second such absence, you must drop the course or receive an F in the course.
8. If you are ill on a lab day or have an emergency, e-mail or call (instructor and TA) before the start of the lab. It is not sufficient to contact your TA alone as your TA does not have the authority to excuse your absence. If you are ill enough to miss lab you must go to the student health center and provide documentation of your illness.
9. Tardiness in showing up for lab will impact your grade. Tardiness will result in a 3 point loss per minute late. These penalties will accumulate during the quarter and will be subtracted from your final grade.

### Assignment Deadlines and Submission:

1. A hard copy of each assignment is due in the **first 10 minutes** of the lecture period of the day on which your assignment is due. Assignments turned in more than 10 minutes after the start of class will be considered late. Penalty for late assignments is 50%, if turned in the next day. They will not be accepted after that.
2. In addition to the hard copy of the lab report, you are required to submit an electronic copy to Turnitin.com. A link to the e-submission website will be provided on TED. Failure to submit on Turnitin.com within 2 days of the due date will result in zero points recorded for the report. Check the deadline of the Turnitin.com submission and make sure you adhere to it.

By taking this course, students agree that the lab report will be subject to review for textual similarity by Turnitin.com for the detection of plagiarism. All submitted reports 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. Penalty points will be taken for late electronic submissions.
4. Although you will be doing the experiments and collecting data with partners, you must hand in your own homeworks and lab report, *written in your own words*. **Copying someone else's lab report or homework is cheating** (see below).

## Grading Scheme

5 notebook checks at 8 points each	40 points
Lab skills/competence	70 points
7 lab quizzes at 15 points each	105 points
8 Homework assignments	230 points
Lab report	160 points
Midterm 1	120 points
Midterm 2	130 points
Midterm 3	145 points
<b>Total</b>	<b>1000 points</b>

### Homework

	<u>Due date</u>	
1. Pre-class survey	Sept 27	10 points
2. Baseline data analysis	Oct 4	15 points
3. Library tutorial	Oct 11	31 points
4. Water contamination analysis	Oct 25	62 points
5. Dilution problems	Nov 1	18 points
6. Unknown analysis	Nov 20	64 points
7. Growth curve	Nov 27	20 points
8. Post-class survey	Dec 4	10 points

**Note:** Just coming to lab does not ensure that you will get a passing grade in the class. You must hand in all assignments and get a passing score (70%) on those assignments to get a C- in the class. You will not pass the course if the combined score for your three exams is less than 197 points (50%).

### Regrade Requests:

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

## Important dates

Oct 18	Midterm 1 (in lecture)
Nov 8	Midterm 2 (in lab)
Dec 6	Midterm 3 (in lab)
Dec 10	Lab report due

## Grade Distribution

A = 90% - 100%
B = 80% - 89.9%
C = 70% - 79.9%
D = 60% - 69.9%
F = below 60%

## Notebook:

Notebook must be bound and have carbons. It must have a table of contents (handwritten OK), so on the first lab day leave several blank pages at the beginning of your notebook. Pages should be numbered. 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. Periodically the TA's will collect the carbons from your notebooks, without prior notice. So keep your notebooks up to date!

## Lab skills and competence

A portion of your grade will be based on participation in the lab, workshops, and computer labs. All students are expected to be good lab citizens. Your attitude, cooperation with others, technique and skill in the lab will contribute to your grade. Lab performance will be based on the following criteria:

1. Promptness
2. Pre-lab preparation
3. Do you pay attention during instructions/introductions?
4. Careful management of lab procedures (e.g., sterile technique, proper waste disposal, experimental procedures, etc.)
5. Ability to adapt to unforeseen procedural changes
6. Caliber of thinking before asking questions
7. Scientific approach (e.g., proper use of notebooks, controls, experimental design, powers of observation)
8. Accuracy
9. Independence
10. Safety consciousness
11. Organization and general neatness in lab
12. Cooperation with classmates

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 TED (<https://ted.ucsd.edu>) and should automatically appear on your TED account as soon as you register for the class. We will use TED to post announcements, information on experiments, exams, schedules, readings and practice material, experimental data, report guidelines, etc. 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 this 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. *This includes rewriting the same ideas in different words.*
- **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.

Your lab report and homeworks for the class must be independently written, i.e., **your own work in your own words**. While discussion of data among lab partners is encouraged, each student must independently complete all text, references, figures, graphs, and tables. The submission of reports or homework by lab partners that contain shared work is forbidden. *Both* students will be held accountable. The exception is when a figure is the raw data that is supplied to each member of the group (e.g. absorption spectra and gel photographs). In this case the labeling of that figure must be done independently. If you have questions about the difference between discussing your work with others and unauthorized collaboration, please ask your instructor or T.A. for clarification.

Because lab reports are to be your own work in your own words, **you may not copy or paraphrase, to any extent, current or past laboratory reports written by other students**. This is plagiarism, a direct attempt by the student to present the ideas of others as their own, and is no different than cheating on an exam. Copying material from other sources without putting it in your own words is also plagiarism, even if the source is cited as a reference. Plagiarism in lab reports is rigorously sought out and penalized.

**Because all quizzes, exams, homeworks and reports are required for satisfactory completion of this course, any student caught cheating on a quiz, exam, homework or report may be given a failing grade for the course and referred to the Office of Academic Integrity for administrative discipline.**