



BIOLOGY 443 MICROBIAL PHYSIOLOGY LAB SPRING 2010

Instructor: Prof. José R. de la Torre, Ph.D.
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Office Hours: Wednesdays, 13:00 – 15:00; Hensill Hall 668A

Schedule Tuesdays & Thursdays, 14:10 – 17:00 PM
Location Hensill Hall 644 on the SFSU Main Campus

Course Description

The world around us is teeming with microbial life. Microbial cells associated with our bodies outnumber our own cells 10 to one! Given their numbers, microorganisms play vitally important roles not only in our biology, but also in the biology and chemistry of the entire planet. In this course, we will explore the range of physiologies and metabolisms found throughout the microbial world. Our approach will be discovery-based, and we will attempt to enrich and isolate some of these microorganisms. We will also learn techniques for characterizing their fundamental physiologies and growth characteristics of these microbes. Over the course of the semester, students will enrich for multiple types of microorganisms and will characterize one of their isolates in greater detail as a final project.

Learning Objectives

By the end of this course, students will be able to:

- Propose hypotheses based on independent reading/thought
- Design experiments (with proper controls) to test these hypotheses
- Carry out key biochemical/physiological tests and explain the principles behind them
- Design experiments to characterize the physiology of novel microorganisms
- Identify microorganisms based on physiological and molecular characteristics
- Design enrichment strategies to culture and isolate unknown microorganisms with known physiologies

Prerequisites

You must have completed, with a grade of C- or better, General Microbiology (**BIOL 401**), General Microbiology Lab (**BIOL 402**), and General Biochemistry (**CHEM 349** or **CHEM 340**) prior to enrollment in BIOL 443. You cannot be concurrently enrolled in these courses and BIOL 443. Students must also have completed or be currently enrolled in the Microbial Physiology Lecture course (**BIOL 442**). Students having completed equivalent coursework at other institutions need to provide evidence (e.g., unofficial transcripts) to the instructor before enrolling in BIOL 443.

In addition, priority will be given to graduating seniors in the Microbiology major. Students in other areas of concentration will be allowed to enroll if they have satisfied the prerequisites and if there is space available.

Students who do not meet these prerequisites will be dropped from the class. Students registered for the course but not attending the first two weeks of lectures may be dropped from the roll without notification.

There is no textbook for this class.

All class material will be distributed through the iLearn website. However, students are also expected to develop their own hypotheses and interpretations of results based on independent reading.

You will also need:

- A laboratory notebook (hard-bound, with printed page numbers)
- A lab coat
- Waterproof markers (sharpies, etc.)
- A three-ring binder for class materials & handouts

Grading

Grading will be based on laboratory reports, evaluation of students' notebooks, performance on quizzes, homework assignments, class participation and **lab citizenship**.

The *tentative* grading scheme for the course is as follows:

Lab reports	5	x	40 pts	=	200 pts	50%
Notebooks	5	X	20 pts	=	100 pts	25%
Homeworks	2	x	20 pts	=	40 pts	10%
Quizzes	2	x	10 pts	=	20 pts	5%
Participation & citizenship					40 pts	10%
TOTAL					400 pts	100%

An ABCDF scale based roughly on 10% intervals will be used (*i.e.*, it is possible for everyone to get an A).

Attendance and participation at all course sessions and completion of all assignments are required to receive credit for the course. Notice that 50% of your grade will depend on your lab reports and another 25% will be based on my evaluation of your lab notebooks. As you are all seniors, I will have very high expectations for the quality of both reports and the notebook. Points will be deducted for sloppiness, poor grammar, poor spelling and lack of rigor. **No late reports will be accepted.** Students will receive zero points for missed assignments or exams unless a verifiable emergency or illness can be proven. Likewise, absences will cost students class participation points.

Class Website & E-mail Policy

Course material, including handouts and assignments, will be made available online through the iLearn system (<http://iLearn.sfsu.edu/>). **Lecture notes will NOT be provided.** Files containing complex figures presented in class will be made available to students on the class iLearn website. These materials are intended to supplement your own notes, not replace them. If you encounter any problems downloading or printing these files, please contact the instructor immediately.

Students are encouraged to e-mail questions to the instructor. Whenever e-mailing questions, please include "BIOL 443" in the subject line and identify yourself by signing the message with your **full name** and **SFSU ID number**. If appropriate, responses will be posted on iLearn or discussed in class—without identifying the student. **Be advised that, in general, e-mails will receive responses within a day or two.**

Changes to the Syllabus or Lecture Schedule

The syllabus and lab schedule are subject to change. Changes to the syllabus or lab schedule will be announced in class and/or posted on iLearn.

Holidays and Furloughs

There will be no class on the following days:

March 30 & April 1, 2010

Tues. February 16, 2010

Spring Break

(We may have Open Lab that day)

Statement on plagiarism and cheating

Students are expected to maintain a high level of academic integrity in all work pursued at SFSU. ***Cheating or plagiarism will not be tolerated under any circumstances in this class.*** Cheating on an examination will result in an automatic zero points for that exam. Plagiarism, defined as either direct copying or loose paraphrasing of text from any published work (including online) without appropriate referencing, or use of another person's work or ideas without appropriate attribution, will result in an automatic zero points for that entire assignment. There will be no second chances. Furthermore, any incidence of cheating or plagiarism will be reported to the Chair of the Biology Department, the Dean of the College of Science and Engineering, and the Office of Student Affairs for possible disciplinary action.

Cell phones & pagers

Please silence cell phones and pagers before arriving in class.

American with Disabilities (ADA) Accommodation

SFSU is committed to providing reasonable academic accommodation to students with disabilities. Students with disabilities who need reasonable accommodations should contact the instructor. The Disability Programs and Resource Center (DPRC) is available to facilitate the reasonable accommodations process. The DPRC is located in the Student Service Building and can be reached by telephone (voice/TTY 415-338-2472) or by e-mail (dprc@sfsu.edu).

Important Deadlines for Add/Drop/Withdrawal:**February 5, 2010**

Deadline to drop courses using GATOR REG.

February 18, 2010

Deadline to add courses with instructor-issued permit number.

February 6 – April 23, 2010

Withdrawal period -- no documentation required.

Withdrawals will result in a "W" grade on transcript records.

April 24 – May 14, 2010

Withdrawal is permissible only for serious and compelling reasons. Students must file a petition to be reviewed by the Instructor and the Department Chair. Approved withdrawals will result in a "W" grade on transcript records.

"Withdrawals are not normally permitted during the final three weeks except in verified cases of accident or serious illness where the cause of withdrawal is due to circumstances clearly beyond the student's control and where the assignment of an incomplete is not practical. Ordinarily, withdrawals in this category will involve total withdrawal from the University." (SFSU Bulletin)