

Dr. Gail Grabowsky Kaaialii
office hours: MWF 9:30 - 11:00; TTh 1:00 - 4:00

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office hours: MT 1:00 - 3:00



Biology 210: Biological Techniques Course Outline & Syllabus

Course Description:

This course is designed to teach you how to do biological research. There are two basic facets to this task. Foremost, the laboratory exercises and instructors aim to teach you some of the most important, cutting edge, most often used, generally applicable -- in short "important" biological research methods and techniques. Such equipment, methodology and/or analyses will serve you wherever you go to do research in the future be it a future course or research program you're involved in at Chaminade or research you may do elsewhere in a summer program, graduate school, medical school, etc. That is, this course is designed to set a foundation for your future research/laboratory experiences. The second aim of this course, which is related to the first but is founded more in practicality, is to teach you how to use *what Chaminade has to offer*. We want you to become proficient with *our* lab at Chaminade. That means knowing where things are, how they are cared for, how they work, what they do and do not do. In order for you to get the most out of your biology education you'll probably want to get the most out of the lab at Chaminade and this course will get you started doing that.

Your objectives for the course should be as follows:

Students Course Objectives:

1. To learn where things are in the lab.
2. To learn what the things in the lab are. This includes learning what things do, what they do not do, and where they should be used (if applicable).
3. To learn how to care for things in the lab.
4. To learn how to order and store supplies.
5. To learn some of the basic, most often used, most generally applicable: tools, techniques, methodologies and methods of analysis used in biological research.
6. To become comfortable and proficient working in the lab, the field, and on the computer for those tools, techniques, etc. encountered in the lab.
7. To learn how to acquire, learn about and implement a new tool or technique. Le. you should learn from this course how you may broaden your repertoire of research capabilities in the future should you decide you want to do so.
8. To learn how to use computers, [etc. to](#) write up research and to learn how to do proper tables, graphs, figures, charts, etc.
8. To learn what scientific integrity is.

Course Mechanics:

This course is going to be team taught by Mr. Gomes, Mr. Iwamoto, Dr. Kaaialii and Dr. Shimakawa. Each of them will instruct you in roughly three laboratory sessions. The syllabus for the course is incomplete and tentative right now. It will be completed and give to you in its final form on our 1/27/97 meeting.

There is no text for the course but there will be reading to do. Roughly a week before each lab you will receive handouts describing the tools, techniques and rationale for the coming lab. You are to read these prior to the lab not only because it will greatly enhance your proficiency, comprehension and enjoyment of the lab but because there will be most likely be some unannounced quizzes at the beginning of some of the labs!

Grading:

Participation	10%
Homework	10%
Quizzes	20%
Practical I	30%
Practical II	30%

Notebooks: You will be keeping a laboratory notebook throughout the course. The notebook will not be collected and graded, it will be for your use only. It will serve as your major study tool prior to the practical exams. Notebooks should contain a write-up for each of the labs, homework, quizzes, observations, notes to yourself, etc.

Exams: There will be two practical exams. Both exams will incorporate written questions as well as lab-practical type questions. All of the questions will be based on the laboratories and any reading material associated with them.

Quizzes: Quizzes will cover material and methods learned in the prior week's lab. Be ready for a quiz each week!

Homework: Each lab may have an accompanying homework assignment. The particulars about each assignment will vary from lab to lab and be explained in each lab.

Absences: Do not miss this class without an excuse. Since we only meet 13 times the entire semester a single unexcused absence effectively means you've missed almost 10% of the course!! That's the same as missing 10 lectures of a course meeting M-W-F! So missing one lab without an excuse will definitely hurt your grade. If you present some form of a document signed by your doctor then an absence can be excused. If you are experiencing some genuinely stressful situation other than illness (death in the family, abuse, pregnancy, etc.) let your instructor know and we'll see what we can do about it. Athletes -- if you have to miss for a game or travel let your instructor know prior to your absence.

Course Schedule

Date	Laboratory Topic	Instructor
1/15/99	Introduction & Course Mechanics; Short Lab: Designing Research Projects, Acquiring Tools, Gathering and Using Data	Dr. Kaaialii
1/22	Lab Safety, MSDS safety, Chemical Stockroom	Dr. Shimakawa
1/29	Disposition of Equipment and Materials	Dr. Shimakawa
2/5	Ordering & Receiving Supplies; Housekeeping	Dr. Kaaialii
2/12	Making Solutions	Dr. Kaaialii
2/19	Animal Care and Maintenance	Dr. Shimakawa
2/26	No Class - Kuhlo Day	
3/5	Finding, Collecting & Transporting Specimens	Dr. Kaaialii

3/12	EXAM /PRACTICAL I	Dr. Shimakawa
3/19	Protein Assay & Specialty Equipment	Dr. Shimakawa
4/2	No Class - Good friday	
4/9	Ecological Instrumentation	Dr. Kaaialii
4/16	Computers, Videos & Laser Disc Use; Integrity	Dr. Shimakawa
4/23	Proper Figures. Graphs, Tables and Illustrations	Dr. Kaaialii
4/30	EXAM /PRACTICAL II	Dr. Kaaialii