
Instructor: paul.wilson@csun.edu (818-677-2937; T & Th 2:00-3:30 Biology Department office on the 1st floor north side of CH, or anytime look for me in CR5317, 5309).

Spring Break and other trips: There will be a week-long trip over spring break. To compensate for this time, there are three other weeks when we will not meet. There are two other trips, and class may be dismissed late on those days.

Tentative Schedule

23 Jan  Land plant overview. Tour greenhouse and plant organs in lab. Learn how to map characters on a phylogeny.

30 Jan  Lecture on bryophyte ecology. Discuss Kimmerer pp. 1-34. Learn how to infer phylogenies. Look at sex organs of bryophytes. How to label herbarium specimens, e.g., for your collection.


20 Feb  ~NO CLASS COMPENSATING FOR BIG TRIP~ Hint, this would be a great day to do your collection.


6 Mar  Discuss pp. K 141-150, 156-162. Lecture on fern diversity. Greenhouse work. A good day to show me how your collection is progressing.

13 Mar  Field trip to Santa Monica Mts weather permitting (otherwise switch with 20 Mar). Discuss Moran Ch’s 1, 2, 4

20 Mar  Paper Due. Discuss M Ch’s 6, 7. Phenetics above the species level using chielanthoid ferns. Scanning electron microscopy. Data in systematics.

27 Mar  ~ NO CLASS COMPENSATING FOR BIG TRIP~ If you haven’t done it yet, you should get serious about your collection.

3-8 Apr  Big trip. Discuss M Ch’s 8, 9, 16, 17. Apr 3 Sequoia National Park (no showers). 4-5 San Joaquin Experimental Range. 6-7 Big Basin State Park. Drive home on the 8th.


24 Apr  Collection due. Study collections in lab. Discuss M Ch’s 29, 30. The analyses of clines. Write key to conifers of the San Gabriel Mountains.

1 May  ~ NO CLASS COMPENSATING FOR BIG TRIP~

8 May  Revision of paper due. Field trip to San Gabriel Mts. We may be home late. Dress in layers. Discuss M Ch’s 23, 24, 25, 27. I sum up diversity in the non-flowering plants as a review. I talk about comparing your collections.

15 May, 8:00-10:00, Test 3.
Prerequisite—Biol. 106 and 106L are prerequisites for this course. If you feel rusty, you should re-read your 106 text concerning (1) meiosis and fertilization, (2) plant life cycles, and (3) major groups of plants. Although I will review quickly before extending my treatment of these topics, having the 106 coverage fresh in your mind will make the rest of the class much less frustrating. There's no reason to start behind!

Readings—We will read two books written for a popular audience: (1) Robin Kimmerer’s *Gathering Moss*¹; and (2) Robin Moran’s *A Natural History of Ferns*². For each week’s readings, you should abstract the science out of the reading and/or write some questions and comments. The main idea here is that you have something scientific to discuss from the readings. You will write it down on paper so that I will have something to grade, even if you are a quiet person. (3) You will also probably want to buy a copy of Malcolm, Malcolm, Shevock & Norris’s *California Mosses*³.

Packet — You will have to purchase a course packet that has diagrams and brief summaries of the lectures and lab exercises.

Tests—About half of each test will be a mixture of practical information from the labs like identifying plants and organs, definitional and short answer questions about the vocabulary. The other half will be essay questions about the readings, the lectures, and systematic methodology. There will be three such exams during the semester. The tests are mildly cumulative but definitely weighted toward material not previously on tests.

Paper – You will write a 1500-2000 word paper. Turn in two copies, one for me and one for a peer reviewer. After we review it, you will revise it, probably extensively. There will be more about this later, but basically I’m thinking it should be a translation of some technical papers into an article written for non-botanists such as would appear in a magazine like *Natural History* or *Discovery*.

Collection and Site Survey – You will make a collection of 30 species of bryophytes. These may all come from one location. If you can’t get 30 from one location, add locations until you have 30 different species; however, you should go ahead and collect repeat specimens of the same species as they occur at your several locations. Be careful about taking notes on the microsite of each specimen and the mesosite of each location. Identify the specimens as best you can (typically to genus), and seek help where you are having difficulty. Not all specimens need to be identified, but I’ll take off points if you don’t put a name on something you ought to be able to figure out. Along with your labeled specimens, you should also turn in a spreadsheet with your data. The data from everyone’s surveys will be put together for a group project. This is a major part of the field studies portion of the class.

¹ Should be in the bookstore. Buy now and be ready for next week.
² not available in the bookstore, but there seem to be plenty of copies that can be purchased online through amazon.com, barnsandnobel.com, etc.
³ needs to be ordered through www.cnps.org, and we should do it as a group to save on shipping.
Transportation. You must sign a waiver to go on field trips and ride in university vehicles. If you prefer, for all but the big trip, you may drive your own cars and meet us at the site, but please car pool when feasible.

Grades:

Test 1 .......................................................................................................................... 15%
Test 2 .......................................................................................................................... 15%
Test 3 .......................................................................................................................... 15%
Paper ........................................................................................................................... 15%
Collection & site survey .............................................................................................. 15%
Questions & comments on readings........................................................................... 15%
Attendance & participation ....................................................................................... 10%

The grade for the lecture, lab and field studies will be the same. Possible grades are A, A-, B+, B, B-, C+, C, C-, D+, D, D-, and F. Ideally, 90% would be an A-, 80% would be a B-, and 70% would be a C-, but I will probably drop these thresholds. Generally, I aim at have A’s go to people who I would think could go on to graduate or professional school, B’s for students who are doing fine as an undergraduate, and C’s for those whose work warns against going on to a master’s program.

Attendance & Participation. My rationale for giving points merely for being with-it in class is that people learn stuff even if they can’t always show it on exams. There’s something that is absorbed just from showing up on time, paying attention, and being part of the conversation. Thus, if you are not there, you will not get the points; I don’t care what the excuse is except in very special circumstances where it is so serious that it might mean taking an “I” (incomplete) or withdrawing from the class for a reason such as a medical condition (in which case go to the Student Health Center first). Consistent with this view, there are basically no make-ups for experiences missed. I might give a make-up exam or partial exam, but I am not going to leave the specimens out so you can make things up later in the week. It’s not the same for one thing. And the room is too busy with other classes for another.

Safety. This is a moderately strenuous class, with a lot of hiking. It is not recommended if you have trouble getting around. If you have any medical condition that might cause a problem in the field—allergies to bees, diabetes, whatever—please tell me about it in writing and tell me what precautions may be taken. I will push the class to keep up with me when we are walking. This is because people tend to lolly-gag, chat, and smell the roses rather more than we have time for. You are responsible for using your own judgment as to what you are physically able to do, and if you don’t think it is wise to do something, don’t do it. Please tell me promptly if there is any problem. Then we can consult as to what to do.

Biology department withdrawal policy: Unrestricted class withdrawals are permitted only until the end of the third week. Thereafter, requests to withdraw will be honored only when a verifiable serious and compelling reason exists and when there is no viable alternative to withdrawal. Poor performance is not an acceptable reason for dropping a class; in fact, you must be passing in order to withdraw. During the last three weeks of class, withdrawals will not be approved except when a student is withdrawing from all classes for verifiable medical reasons.

Plagiarism and cheating: Plagiarism is the taking of someone else’s writing and presenting it as your own, for instance copying material from the www or from a published article into your paper (even a single sentence). I require that you express everything in your papers in your own words, except (rarely) for short quotations in quotations marks with a reference cited. Examples of cheating would be looking at someone else’s paper during a test, at your own notes, at a field guide, or letting someone else look at your paper.
All forms of plagiarism and cheating are expressly forbidden by University rules and will not be tolerated. Anyone one who plagiarizes or cheats will receive a zero grade for that assignment or test. In addition, a report will be filed that could be put on your permanent University record available to other universities and employers (see “Academic Dishonesty” in University catalog).

Students with disabilities: must register with the Center on Disabilities and complete a service agreement each semester. Staff within the Center will verify the existence of a disability based on the documentation provided and approved accommodations. Students who are approved for test taking accommodations must provide an Alternative Testing Form to their faculty member signed by a counselor in the Center on Disabilities prior to making testing arrangements. The Center on Disabilities is located in Bayramian Hall, room 110. Staff can be reached at 818-677-2684.
Academic Field Trip Waiver of Liability and Hold Harmless Agreement

I, the undersigned participant, am requesting participation in the CSU, Northridge, Department of Biology, College of Science and Math, field trips associated with **BIOL 409/L/492J Nonflowering Plants**:

<table>
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<tr>
<th>Expected date</th>
<th>Approximate expected time period</th>
<th>Destination</th>
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<tr>
<td>13 Mar, else 20 Mar</td>
<td>8:00-5:00</td>
<td>Santa Monica Mountains, including Cold Creek</td>
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<tr>
<td>Apr 3-8</td>
<td>8:00-20:00</td>
<td>Apr 3 Sequoia National Park. 4-5 San Joaquin Experimental Range. 6-7 Big Basin State Park. Drive home on the 8th.</td>
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<td>8:00-20:00</td>
<td>San Gabriel Mountains</td>
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In consideration of my voluntary participation in the above captioned activity, I hereby waive all claims of action against the State of California; the Trustees of the California State University; CSU, Northridge and its auxiliary organizations; and their officers, directors, employees, and agents of all which are collectively hereinafter referred to as the “State,” arising out of my participation in the activity and hereby release, hold harmless, and discharge the State from all liability in Connection therewith.

Knowing, understanding, and fully appreciating all possible risk, I hereby expressly, voluntarily, and willingly assume all risk and dangers associated with my participation in this activity. These risks could result in damage to property, personal and/or bodily injury or death.

In addition, I have been advised to obtain personal medical coverage either through the California State University, Student Health Insurance Program (CSUSHI) or a medical insurance carrier of my choosing. Furthermore, I agree to use my personal medical insurance as the primary medical coverage payment if accident of injury occurs.

By initializing here ____________, I allow for the possibility that I may drive a privately owned vehicle to the destination on occasion. In that event, I hereby certify that, whenever I drive a privately owned vehicle to or from a University-affiliated event, I will have a valid driver’s license in my possession, all persons in the vehicle will wear safety belts, and the vehicles shall always be: (1) Covered by liability insurance for the minimum amount prescribed by California State Law ($15,000 for injury/death to one person; $30,000 for injury/death to, more than one person; $5,000 for property damage). (2) Equipped with safety belts in operating condition for all passengers and driver. (3) To the best of my knowledge, the vehicle is in safe mechanical condition as required by law and adequate for the work to be performed. I further certify that I have no outstanding traffic warrants. I further certify that while using a privately owned vehicle on University-affiliated business, I will report all accidents to CSUN’s Office of Insurance & Risk Management (818-677-2079) and a vehicle accident report <www.documents.dgs.ca.gov/osp/pdf/std270.pdf> will be completed and filed within 48 hours of the accident. I understand that this authorization only applies to the above specified University-affiliated Program or Activities and that in the case of an accident my personal vehicle insurance will be the primary coverage.

I have read this waiver and release and understand the terms used in it and their legal significance. This waiver and release is freely and voluntarily given with the understanding that right to legal recourse against the State is knowingly given up in return for allowing my participation in the activity.

My signature on (the reverse side of) this document is intended to bind not only myself but also my successors, heirs, representatives, administrators, and assigns.
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<tr>
<th>Field</th>
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<tr>
<td>Participant’s signature</td>
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<td>Print Participant’s Name</td>
<td>Phone Number</td>
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<td>Emergency contact’s name</td>
<td>Relationship</td>
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<td>Parent’s signature (if participant is a minor)</td>
<td>Date</td>
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<tr>
<td>Instructor’s Signature</td>
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<td>Print Instructor’s Name</td>
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