



Botany 4600 Plant Ecology (Spring 2012)

I. General Information

Professor: Dr. Michael Fleming
Office: N 261
Office Hours: Tuesday 10-11:30, Wednesday 2:30-3:30 or by appointment
Phone: 664-6923
Email: mfleming1@csustan.edu
Lectures: MWF 1:00 – 1:50 in N 206
Lab: M 2:30 – 4:50 in N211
Required Text: *The Ecology of Plants, 2nd ed.* by J. Gurevitch *et al.*

II. Course Description

Plant Ecology is the study of the interrelationships between plants and their environment, with special emphasis on the structure, development, and distribution of plant communities. This course satisfies the ecology elective for the biology major. **Prerequisites:** BIOL 1150, CHEM 1110, or equivalent. **Strongly recommended:** one semester of statistics (MATH 1600, 1610 or 4640) and general ecology (BIOL 4680).

III. Assignments, Exams and Grading

Exams. We will have three midterm exams and one comprehensive final exam. Exams will consist of multiple choice, true/false, matching, diagram interpretation, and open response questions. Bring Scantron **882-E** for the exam days. All personal communication devices must be turned off during class and exams. Please plan ahead and arrive early on exam days. Mid-term exams are given in class, and the final exam will be in the lecture room. Exams must be taken during the scheduled times. Requests for early exams must be submitted *in writing* to the instructor prior to the scheduled exam. You will need to provide some evidence of hardship. **No makeup exams will be given after graded exams have been returned to the class.**

Primary Literature. Throughout the semester we will have various in-class group assignments stemming from outside readings from primary literature. Some assignments may be worth more than others (depends on the length and rigor of the paper). No makeup assignments will be given. These assignments are designed to provide opportunities for you to delve into plant ecology research, discuss complicated concepts and terminology, and teach each other.

Labs. The laboratory and lecture are generally integrated, and each lab period will have a special emphasis that (hopefully!) further illustrates concepts introduced in lecture. Labs will generally NOT have an accompanying lab report; rather, lab grades are based on (1) participation and (2) the term project that you and your team design, implement, analyze, write up and report to the rest of the class. Any take-home work stemming from a lab constitutes “participation” and will be due the next week at beginning of lab. Students can only get credit for a lab if they are present in lab—there are no make-up labs. Lab activities will include, but are not limited to, greenhouse and bio-ag area work, plant identification, statistical methods relevant to analyzing plant community data, and field trips.

Grades: There are 600 points possible in this course distributed as follows:

<i>MIDTERM EXAMS (70 pts. x 3 exams)</i>	<i>= 210 pts.</i>
<i>FINAL EXAM</i>	<i>= 150 pts.</i>
<i>PRIMARY LITERATURE DISCUSSION (10 pts. x7 weeks)</i>	<i>= 70 pts.</i>
<i>LAB TERM PROJECT</i>	<i>= 100 pts.</i>
<i>LAB PARTICIPATION (5pts. weekly)</i>	<i>= 70 pts.</i>
<i>TOTAL</i>	<i>= 600 pts.</i>

I calculate grades as a function of grade point average (GPA) where A=4.0 and D=1.0 (I will show you an example of this in class). Students find this method fair and equitable. **I give + and – grades** as follows:

4.0-3.8 = A	3.7-3.6 = A-	3.5-3.3 = B+	3.2-3.0 = B	2.9-2.6 = B-	2.5-2.3 = C+
2.2-2.0 = C	1.9-1.6 = C-	1.5-1.3 = D+	1.2-1.0 = D	0.9-below = F	
<i>CR = 1.6 or higher</i>		<i>NC = 1.5 or lower</i>			

Options: **February 22** is the census date; CSUS policy states that is the last day to choose CR/NC. It is also the last day to drop the course. Instructors can extend the time to choose grade options. Therefore, **April 4th** is the **last day** you may change your grading option (CR/NC) with me. I will strictly follow the grading option indicated on the final grade sheet supplied by Admissions and Records. Consult with your advisor before making your decision. Grades will **not** be changed once they have been submitted. **Choose wisely, and if you choose CR, I won't change the grade to a NC.**

NOTE: I will grade material and hand it back to you so *you can calculate your own grade*. Make adjustments in your studies to do better and/or come to office hours if you need help.

Extra Credit

I do not plan to offer extra credit. If I do come up with a great idea for extra credit, I will let you know. The best thing to do is to do well in class.

IV. Field Trips

We will have field trips during the semester. We will visit Red Hills, a serpentine soil site with many endemic plants. We may also visit Arena Plains, a grassland preserve, Buffington Tract Preserve, a remnant riparian gallery forest across the river from Caswell State Park, or one of the local National Wildlife Refuge complexes. At least one of these trips will take place on a weekend*; the others may be done during lab time. For each field trip, we will meet in the parking lot at the east end of Naraghi Hall to drive there. Field notes/plant lists will be expected from those trips. Details provided in class.

* We will vote as to which days the field trips will be; since many of you may be taking other field courses this spring, a Sunday and/or lab times may be preferred! With this dry winter we are having we are at the mercy of the elements. More on this in class.

V. Academic Honesty

Academic honesty is essential for effective teaching and learning. I expect students to have the highest standards of academic honesty, and I won't tolerate academic dishonesty (cheating). Any academic dishonesty will result in an F in the class and the matter will be turned over to the appropriate student disciplinary committee.

VI. Study Skills

The following suggestions may help you succeed in this and other classes. 1. **Read** the chapter before class and bring questions you have from the chapter to class. 2. **Attend** class. 3. **Complete all assignments** and turn them in on time. 4. Take notes in a way that is intuitive to you, even if you have to use a lot of paper. 5. **Join a study group** with likeminded individuals. 6. **Study** for the exams sooner than the night before or

morning of the exam. 7. **Go to bed early** the night before and get up early the day of exams. 8. **Learn how you learn** and then stick with a style or process that is successful for you.

Learning takes time and is difficult (impossible?) to do in a single session before an exam. Form a study group that meets regularly so you can talk about new concepts and review terminology with your colleagues. When studying for exams, focus primarily on lecture notes and concepts emphasized in in-class activities. Students who study in groups tend to do better than those that study alone.

VII. Graduate Students

If you are taking this course as part of a Master's degree program, then extra work is required. Please set up a time to talk to me about additional graduate-level assignments.

VIII. Tentative Schedule (subject to change)

<i>Week (Monday date)</i>	<i>Lecture Topic(s)</i>	<i>Readings</i>	<i>Lab</i>
1 (Jan. 30)	Introduction Scientific Method in Field Ecology	Ch. 1 Ch. 9 (1 st half)	Greenhouse → set up competition experiment
2 (Feb. 6)	Gradients in Space Climate	Ch. 2, 3, 4 Ch. 17	Finish competition set up Campus Plant walk, ID plants
3 (Feb. 13)	Biomes Indicators	Ch. 18 Ch. 7, 8	Theory and Practice of sampling communities
4 (Feb. 20)	Nature of Populations EXAM 1 FRIDAY	Ch. 5	Team formation, brainstorm term projects
5 (Feb. 27)	Nature of Communities Ordination Methods	Ch. 9 (2 nd half), 15	Statistical Methods 1 – the basics (mean, SD, types of graphs)
6 (Mar. 5)	Classification Methods	Ch. 15	Statistical Methods 2 – Indirect Ordination
7 (Mar. 12)	Competition Herbivory	Ch. 10 Ch. 11	Statistical Methods 3 – Direct Ordination FIELD TRIP THIS WEEKEND??
8 (Mar. 19)	Succession EXAM 2 FRIDAY	Ch. 12	Process plants/data from competition experiment FIELD TRIP THIS WEEKEND??
9 (Mar. 26) <i>no class Fri!</i>	Landscape Ecology	Ch. 16	Process soil from FT, begin entering/formatting data
10 (Apr. 2)	Lessons From Succession	Ch. 12, 13	Work on reports
SPRING BREAK!			
11 (Apr. 16)	Restoration Ecology	Ch. 12 (last section), 8	Work on reports
12 (Apr. 23)	EXAM 3 MONDAY Plants and People	Ch. 21	Work on reports
13 (Apr. 30)	Global Climate Change	Ch. 21, 19	Reports
14 (May 7) <i>no class Fri!</i>	Extinction There is Always Hope	Ch. 19 Ch. 13	Reports
15 (May 14)	Summing Up FINAL EXAM = WED. 23rd, 11:15- 1:15		