

BIOLOGY 440 – ANGIOSPERM TAXONOMY CLASS SYLLABUS, SPRING 2012

Lecture: T-Th 10:40 - 11:30 am, BIOS 335
Lab: T-Th 11:45am - 2:15 pm, ASCB 261

Instructor: Dr. Kirsten Fisher. ASCL 393, (323) 343 2089; kfisher2@calstatela.edu
Office hours: Wednesdays: 9:30 am - 12 pm and by appointment

No required text: Course materials and announcements will be made available on Moodle (<http://moodle.calstatela.edu>). You are required to keep a laboratory notebook for this course.

Course Overview: Historically, angiosperm taxonomy and systematics have played a pivotal role in both the conceptual and practical organization of biological diversity. The first truly systematic treatments of organisms focused on plants, and many currently recognized flowering plant families trace a direct lineage back to these formative works. Modern angiosperm systematics integrates both molecular and morphological data and uses advanced analytical tools to organize flowering plant diversity based on evolutionary relationships.

Objectives: You will learn the basic theory underpinning modern phylogenetic systematics and the methods involved in phylogenetic analysis. Through the lecture and lab, you will learn to identify major groups of flowering plants and some of the diagnostic features uniting different groups of angiosperms. You will also learn major evolutionary relationships among different angiosperm groups and key events in the evolution of the flowering plants. In the laboratory sessions, you will gain experience using dichotomous keys to identify plants to species, as well as practical expertise in identifying plant specimens to family. Diversity in this course will be focused on plants and plant families that are native to the California Floristic Province.

Grading Policy: Your grade will be based on combined points from lecture and laboratory.

Point values for assignments are as follows:

Lecture Midterm.....	25
Final Presentation.....	25
Laboratory Notebook.....	20
Herbarium Project.....	50
Keying Exercises (6 @ 5pts. each).....	30
First Laboratory Practical	50
<u>Final Laboratory Practical</u>	<u>50</u>
TOTAL	250

Grading will be based on a percentage of total points, as follows:

92-100% = A	77-79% = B-	65-67% = D+
88-91% = A-	74-76% = C+	61-64% = D
85-87% = B+	71-73% = C	59-60% = D-
80-84% = B	68-70% = C-	<58% = F

Participation in the labs and field trip is required. Participation entails timely arrival to labs and field trips, and full participation in the scheduled activity. Since the class schedule is set in advance and field trips occur during class/lab time, conflicts with outside employment will not be accepted as a valid excuse for absence from the field trips.

Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation.

Laboratory notebook: Each student is required to keep a lab notebook. Instructions will be given to guide students in the development of an effective laboratory notebook for this course. Students' notebooks will be checked for completeness during four of the lab sessions (denoted with an asterisk* in the syllabus).

Final Presentation: Will relate to your Herbarium Project (see below) and will occur during the scheduled final exam time.

Herbarium Project: Students will work in teams of two to revise and annotate the specimens from an assigned plant family. Teams will prepare a short (10 minute) presentation on their family, including information on CA native species from that family, natural history and ecology, habitat preferences, geographic distribution, ethnobotanical significance, and horticultural use.

Keying exercises, worth 5 points each, will take place at the beginning of six lab sessions. Keys will be provided by the instructor, and exercises will be graded and discussed as a class.

Lecture midterm: This written exam will emphasize conceptual material presented during lectures (weeks 1-4).

Laboratory practicals will occur twice during the quarter; the first practical will be held during both the lecture and lab time slots; the final practical will be held during the course's scheduled final exam time. Practical will cover taxonomic skills gained in both the lecture and lab portions of the course, and will focus on interpreting live plant materials and/or assigning plant materials to appropriate higher taxonomic groups. Make-up practicals will only be given under exceptional circumstances, for absences with valid, thoroughly documented excuses. The final practical will not be cumulative, and will only include material presented after the first practical.

Other requirements: Each student is expected to have an AD account for access to email and the class Moodle site.

Academic honesty: Students are expected to abide by the University's Academic Honesty Policy, (<http://www.calstatela.edu/academic/senate/handbook/ch5a.htm>). Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation. Students are expected to do independent work on all exams and written assignments; copying from each other or from any other source without proper attribution will be considered plagiarism.



Biology 440 Lecture Schedule – Spring 2012

Note that dates, topics and activities may change. Any changes to the schedule will be announced in class or in labs and posted online on Moodle; it is the responsibility of the student to remain informed of any announced schedule changes.

Week-Date	Lecture Topic	Lab Activity / Families
1 – Apr 3	Phylogenetic systematics & Plant systematics	Lab check-in, Introduction
1 – Apr 5	Morphological characters	Survey/review of plant morphology
2 – Apr 10	ANITA grade, Magnoliids	Magnoliaceae, Lauraceae, Aristolochiaceae
2 – Apr 12	Monocots – Liliales, Asparagales	Liliaceae, Agavaceae, Alliaceae, Iridaceae, Orchidaceae
3 – Apr 17	Monocots – The grasses	*Poaceae
3 – Apr 19	Basal Eudicots (Tricolpates) – Ranunculales, Proteales	Ranunculaceae, Berberidaceae, Papaveraceae, Platanaceae
4 – Apr 24	Core Eudicots (Tricolpates) – Caryophyllales	Caryophyllaceae, Amaranthaceae, Portulacaceae/Cactaceae, Polygonaceae Droseraceae
4 – Apr 26	Herbarium Tour (meet at BIOS 221)	Herbarium Tour and Family Assignments
5 – May 1	Midterm Exam	
5 – May 3	Field trip – LA Arboretum, 11:00 – 1:45	
6 – May 8	First Lab Practical – No Lecture	
6 – May 10	Rosid clade, Fabids	*Fabaceae, Salicaceae
7 – May 15	Rosid clade, Fabids	Rosaceae, Rhamnaceae, Fagaceae, Onagraceae
7 – May 17	Herbarium Project (meet at BIOS 221)	Herbarium Project
8 – May 22	Rosid clade, Malvids	*Brassicaceae, Malvaceae, Anacardiaceae, Sapindaceae
8 – May 24	Asterid clade, Lamiids	Ericaceae, Solanaceae, Apocynaceae, Plantaginaceae
9 – May 29	Asterid clade, Lamiids	Bignoniaceae, Lamiaceae, Apiaceae
9 – May 31	Asterid clade, Campanulids, Project Report Due, Annotations Completed	*Asteraceae
10 – Jun 5	Field trip – Eaton Canyon, 11:00 – 1:00	
10 – Jun 7	Final Lab Practical – No Lecture	
Jun 14	Project Presentations – 8:30-10:30 am	