

Integrative Biology 102/102L Spring 2013
Introduction to California Plant Life

Instructor: Dean Kelch, University Herbarium (1st floor of VLSB). Office hours: Friday 12:00-12:45 PM Phone 642-2465, email dkelch@berkeley.edu

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Hours and Field trips:

Lectures: Wednesday & Friday 1:10-2:00 PM) 109 Dwinelle Hall

Laboratories: Wednesday & Friday 9:10 AM-12:00 or 2:10-5:00 PM 3030 VLSB

Weekend one day field trips: two mandatory field trips in April

Course Description: Integrative Biology 102 & 102L (note: both must be taken concurrently). Introduction to California Plant Life (4 units). Prerequisites: Biology 1B or permission of Instructor. This class will study the relationship of the main California plant groups and plant associations to climate, soils, vegetation, geological and recent history, and conservation. The laboratory focuses on the main plant groups and the major plant families of California. It also emphasizes the use of dichotomous keys to identify native and naturalized vascular plants.

Course mechanics and policies

LECTURE SCHEDULE: The attached schedule is an approximate outline for the course. The schedule may change according to class needs or unforeseen circumstances.

Notifications of any changes to the schedule will be announced in advance and posted on bspace.

COURSE WEBSITE: (<http://bpace.berkeley.edu>) Attention to the course website is mandatory. Class announcements, lecture outlines and/or slides, labs, review sheets, and supplemental materials will be posted on this website. **Printed copies of course material will not be available in class.**

Required textbooks:

Baldwin, B. G., D. Wilken, D. Goldman, D. J. Keil, & R. Patterson. 2012. *The Jepson Manual: Vascular Plants of California, Second Edition, Thoroughly Revised and Expanded / Edition 2*. University of California Press.

Ornduff, Robert, P. M. Faber, and T. Keeler-Wolf. 2003. *Introduction to California Plant Life*. Berkeley: University of California Press.

Additional Reading:

Barbour M., T. Keeler-Wolf, A. A. Schoenherr, Eds. 2007. *Terrestrial Vegetation of California, 3rd Ed.* University of California Press.

Shoeherr, Allan A. 1995. *A Natural History of California*. Berkeley: University of California Press.

Simpson, M. G. 2010. *Plant Systematics, 2nd Ed.* Academic Press.

Sight ID - been plants before
keeping - new plants

Grading: Grades in IB 102 are based on the laboratory and lecture examinations and quizzes. The approximate grade distribution will be: *Applied course*

	<u>Lecture</u>	<u>Laboratory</u>
Midterm	50 pts	50 pts
Final	100 pts	100 pts
Quizzes		50 pts

(11 quizzes - 5 pts each & lowest score dropped)

*Keying live specimens
no make-ups*

Lecture examinations cover material in lectures, hand-outs, and readings; the questions will be in the form of matching, completion, or short essay. Laboratory examinations include keying unknown plants and sight recognition of selected taxa. In laboratory exams, you will be required to recognize genera and families (you will have to recognize and identify species of oaks and pines). In lecture exams, you will be expected to know plants (at any appropriate taxonomic level) that are ecologically and evolutionarily important.

Field Trips: Field trips are an integral part of the course and are an excellent way to reinforce both lecture and laboratory material. Field trips are where the class comes together. The more time you spend in the field, the better you will be able to understand the natural history of the area. Therefore, all field trips are mandatory. Many of the laboratory quiz points will be earned on field trips. You must provide your own transportation to laboratory field trips (your GSI will help you make carpool arrangements). On weekend field trips a bus will be provided for participants. These field trips will be held during nice weather and even in light rain (wear appropriate clothing, including field shoes). If the weather is very bad, the field trip will be scheduled the next week. weekend field trips will leave at 8:00 AM sharp from the circle. They will last until about 7:30 PM, so pack a lunch. Like all field trips, these two field trips are mandatory.

Web-based Resources:

IB102 bSpace page: <http://bspace.berkeley.edu>

IB 102 website: <http://ib.berkeley.edu/courses/ib102/>

Plant communities of California:

<http://geography.berkeley.edu/ProjectsResources/CalPlants/califplanttable.html>.

A description of attributed of the many plant communities common in California.

Calphoto: <http://elib.cs.berkeley.edu/photos/>. Photos of many of the plant species found in California. This will be very helpful in studying for sight identification for laboratory exams.

*http://ucjeps.berkeley.edu/FSM.html
key for families & genera: updated taxonomy*

California Plant Life - Integrative Biology 102 -- Syllabus Spring 2013

Lecture

Laboratory

W Jan 23	Introduction Ornduff (O): 4-16	W Jan 23	Herbaria tour, keying Jepson Manual (JM): 37-
48			
F Jan 25	Plant Morphology	F Jan 25	Vegetative Morphology JM: 1-12; scan 13-28
W Jan 30	Names/keys O:17-33	W Jan 30	Floral & Fruit Morphology
F Feb 1	CA climate & topography	F Feb 1	Pteridophytes
W Feb 6	CA geology & soils	W Feb 6	Gymnosperms
F Feb 8	Phylogeny	F Feb 8	UC Botanic Garden FIELD TRIP
W Feb 13	Pollination/ Dispersal O: 80-88	W Feb 13	Basal angiosperms Caryophyllidae I
F Feb 15	Invasive Plants & Humans	F Feb 15	Caryophyllidae II
W Feb 20	Topo/Climate/Vegetation O: 42-62; 72-80	W Feb 20	Rosid I
F Feb 22	History CA Flora O: 230-245; JM: 49-58	F Feb 22	Rosid II
W Feb 27	Speciation O: 98-105	W Feb 27	Hillside Nature Area FIELD TRIP
F Mar 1	Coastal communities O: 112-159	F Mar 1	Asterid I
W Mar 6	MIDTERM EXAM	W Mar 6	EBRP Botanic Garden FIELD TRIP
F Mar 8	Endemism O: 34-39; 62-67; 105-109	F Mar 8	MIDTERM EXAM
W Mar 13	Salt marsh O: 159-165	W Mar 13	Rosidae III
F Mar 15	Coastal Scrub O: 164-165; 175-177	F Mar 15	Monocots I
W Mar 20	Closed Cone Conifer O: 165-170	W Mar 20	Huckleberry Preserve FIELD TRIP
F Mar 22	Northern Coastal Forest O: 170-175	F Mar 22	Rosid IV
W Mar 27	SPRING BREAK	W Mar 27	SPRING BREAK
F Mar 29	SPRING BREAK	F Mar 29	SPRING BREAK

W Apr 3	Chaparral O: 178-186	W Apr 3	Sibley Regional Park
F Apr 5	Oak Woodland O: 178-186	F Apr 5	Asteridae II
Sa Apr 6	FIELD TRIP	Pt Reyes	8 AM - 6 PM
W Apr 10	Grasslands O: 187-191	W Apr 10	Asteridae III
F Apr 12	Montane Forests O: 178-186	F Apr 12	Skyline Prairie FIELD TRIP
W Apr 17	Alpine Vegetation O: 208-211	W Apr 17	Monocot II
F Apr 19	Riparian/Freshwater Marsh O: 191-197; 207-208	F Apr 19	Riparian Plants
Su APR 21	FIELD TRIP Mt Diablo	8 AM - 6 PM	
W Apr 24	Desert communities O: 88-93; 212-227	W Apr 24	Monocots III
F Apr 26	Desert Comparison	F Apr 26	Asteridae IV
W May 1	Island Biology	W May 1	EBRP Botanic Garden Review FIELD TRIP
F May 3	Rare Plants & Conservation O: 272-295	F May 3	FINAL LAB EXAM
W May	FINAL LECTURE EXAM	3-6 PM	

Families covered in labs:

Pteridophytes: Isoetaceae, Selaginellaceae, Equisetaceae, Pteridaceae, Dennstaedtiaceae, Dryopteridaceae, Blechnaceae, Marsileaceae, Salviniaceae, Polypodiaceae

Gymnosperms: Gnetaceae, Cupressaceae, Pinaceae, Taxaceae

Basal Angiosperms: Nymphaeaceae, Lauraceae, Calycanthaceae, Aristolochiaceae; Ranunculaceae, Berberidaceae, Papaveraceae, Platanaceae, **Caryophyllid I:** Plumbaginaceae, Polygonaceae, Santalaceae

Caryophyllid II: Amaranthaceae, Aizoaceae, Cactaceae; Caryophyllaceae, Chenopodiaceae, Frankeniaceae, Nyctaginaceae, Portulacaceae, Montiaceae, Simmondsiaceae

Rosid I: Vitaceae, Geraniaceae, Onagraceae; Zygophyllaceae, Euphorbiaceae, Rosaceae, Violaceae, Salicaceae,

Rosid II: Fabaceae, Oxalidaceae, Rhamnaceae, Urticaceae

Asterid I: Ericaceae, Sarraceniaceae, Primulaceae, Myrsinaceae, Polemoniaceae, Fouquieriaceae, Cornaceae, Hydrangeaceae, Rubiaceae, Apocynaceae, Garryaceae;

Rosids III: Cucurbitaceae, Fagaceae, Betulaceae, Myricaceae, Juglandaceae, Sapindaceae, Rutaceae, Anacardiaceae,

Monocots I: Alismataceae, Araceae, Potamogetonaceae, Zosteraceae; Liliaceae, Melanthaceae

Rosid IV: Crassulaceae, Grossulariaceae, Paeoniaceae, Saxifragaceae, Brassicaceae, Malvaceae

Asteridae II: Solanaceae, Convolvulaceae, Boraginaceae, Apiaceae, Araliaceae

Asteridae III: Plantaginaceae, Phrymaceae, Orobanchaceae, Scrophulariaceae, Lamiaceae

Monocots II: Arecaceae, Pontederiaceae, Typhaceae, Juncaceae, Cyperaceae, Poaceae

Riparian

Monocots III: Agavaceae, Alliaceae, Asparagaceae, Iridaceae, Orchidaceae, Ruscaceae, Smilicaceae, Themidaceae

Asterids IV: Compositae, Adoxaeae, Campanulaceae, Caprifoliaceae, Valerianaceae