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

Graduate Student Instructors: Tom Madsen tmadsen@hotmail.com; Adam Schneider aschneider@berkeley.edu

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://bspace.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:

Additional Reading:

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:

<table>
<thead>
<tr>
<th></th>
<th>Lecture</th>
<th>Laboratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm</td>
<td>50 pts</td>
<td>50 pts</td>
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<tr>
<td>Final</td>
<td>100 pts</td>
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<tr>
<td>Quizzes</td>
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<td>50 pts</td>
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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/Projects/Resources/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/lm.html
Key for families & genera: updated taxonomy.
<table>
<thead>
<tr>
<th>Lecture</th>
<th>Laboratory</th>
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<tbody>
<tr>
<td>F Jan 25</td>
<td>Plant Morphology</td>
</tr>
<tr>
<td>W Jan 30</td>
<td>Names/keys O:17-33</td>
</tr>
<tr>
<td>F Feb 1</td>
<td>CA climate &amp; topography</td>
</tr>
<tr>
<td>W Feb 6</td>
<td>CA geology &amp; soils</td>
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<tr>
<td>F Feb 8</td>
<td>Phylogeny</td>
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<tr>
<td>W Feb 13</td>
<td>Pollination/ Dispersal O: 80-88</td>
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<tr>
<td>F Feb 15</td>
<td>Invasive Plants &amp; Humans Topo/Climate/Vegetation O: 42-62; 72-80</td>
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<tr>
<td>W Feb 20</td>
<td>History CA Flora O: 230-245; JM: 49-58</td>
</tr>
<tr>
<td>F Feb 22</td>
<td>Speciation O: 98-105</td>
</tr>
<tr>
<td>W Feb 27</td>
<td>Coastal communities O: 112-159</td>
</tr>
<tr>
<td>W Mar 6</td>
<td>MIDTERM EXAM</td>
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<tr>
<td>F Mar 8</td>
<td>Endemism O: 34-39; 62-67; 105-109</td>
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<tr>
<td>W Mar 13</td>
<td>Salt marsh O: 159-165</td>
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<td>F Mar 15</td>
<td>Coastal Scrub O: 164-165; 175-177</td>
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<tr>
<td>W Mar 20</td>
<td>Closed Cone Conifer O: 165-170</td>
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<tr>
<td>F Mar 22</td>
<td>Northern Coastal Forest O: 170-175</td>
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<tr>
<td>W Mar 27</td>
<td>SPRING BREAK</td>
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<tr>
<td>F Mar 29</td>
<td>SPRING BREAK</td>
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</tbody>
</table>
W Apr 3  Chaparral  W Apr 3  Sibley Regional Park
   O: 178-186
F Apr 5  Oak Woodland  F Apr 5  Asteridae II
   O: 178-186
Sa Apr 6  FIELD TRIP  Pt Reyes  8 AM - 6 PM
W Apr 10 Grasslands  W Apr 10 Asteridae III
   O: 187-191
F Apr 12 Montane Forests  F Apr 12 Skyline Prairie
   O: 178-186  FIELD TRIP
W Apr 17 Alpine Vegetation  W Apr 17 Monocot II
   O: 208-211
F Apr 19 Riparian/Freshwater Marsh  F Apr 19 Riparian Plants
   O: 191-197; 207-208
Su APR 21  FIELD TRIP  Mt Diablo  8 AM - 6 PM
W Apr 24 Desert communities  W Apr 24 Monocots III
   O: 88-93; 212-227
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  F May 3 FINAL LAB EXAM
   O: 272-295
W May  FINAL LECTURE EXAM  3-6 PM
Families covered in labs:

**Pteridophytes**: Isoetaceae, Selaginellaceae, Equisetaceae, Pteridaceae, Dennstaedtiaceae, Dryopteridaceae, Blechnaceae, Marsileaceae, Salvinia, 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, Portulaceae, 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, Smilacaceae, Thymelaeaceae

**Asterids IV**: Compositae, Adoxaceae, Campanulaceae, Caprifoliaceae, Valerianaceae