

**BOTANY 201**  
**FORM AND FUNCTION IN PLANTS**  
**Spring 2013**

**Instructor:** Dr. Curtis Clark  
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**Office hours:** MWF 9:00-9:50 am  
**Lecture times:** Mondays, Wednesdays, and Fridays 10:00-10:50 am  
**Lecture room:** Building 15, Room 1807  
**Text:** RF Evert, SE Eichhorn. 2012. *Raven Biology of Plants*, Eighth Edition. W. H. Freeman and Company, New York.

**COURSE DESCRIPTION**

As the title of the course indicates, you will learn about the form (anatomy and morphology) and function (physiology and reproduction) of green plants, which includes everything from small unicellular green algae to large flowering trees and shrubs. Green plants are often the main primary producers in coastal marine and freshwater habitats and dominate all but the harshest of terrestrial habitats. In fact, the colonization of land by green plants allowed other major groups of large eukaryotes to colonize terrestrial environments.

The major topics of the course are:

- Basic plant anatomy and morphology;
- The relationships between plant structures and physiology;
- Photosynthesis;
- The uptake and transport of water and nutrients;
- Plant responses to the environment;
- Plant reproduction and its relationship with plant phylogeny.

By the end of the course you should understand the basic structural features of plants and how these traits have been modified by natural selection.

**COURSE POLICIES**

**Attendance:** Formal attendance will not be recorded. However, because much of the material covered in exams will be from information presented in lecture, it is recommended that you attend class regularly.

**Academic integrity:** Cheating will not be tolerated. If you do any of the following, the Office of Judicial Affairs will be contacted immediately:

- Plagiarism of any work. Plagiarism is intentionally or knowingly using the work of others as your own work.
- Cheating during exams. The following acts are not allowed prior to or during exams: looking at and/or copying from another student's exam, using "crib-sheets, opening books, and obtaining copies of exams in advance of the exam time.

- Falsifying University documents.

For more information regarding the policy on academic integrity, please see the Cal Poly Pomona Catalog 2011-2013 or <http://dsa.csupomona.edu/judicialaffairs/academicintegrity.asp>.

**Midterm exams:** All midterms will be administered in Blackboard, and no class time will be allocated for them.

- Each midterm will be available for 48 hours. You must complete the exam during that period; there are no make-up exams. Please check out your internet connection in advance, and have an alternate place to take the test if your chosen locality doesn't work out.
- Each midterm will consist of 40-60 multiple choice questions that emphasize factual information, problem solving, connections, and synthesis. Exams will cover material presented in the lecture, and material from the text and assigned readings that directly supports material from the lecture.
- You may use any reference material to help you with the test, including your textbook, other books about botany, and the World Wide Web (even Wikipedia, if you like to live dangerously). You are responsible for coming up with the answer I expect even if your reference gives a different answer. If you clearly believe that your reference is correct and I am wrong, be prepared to substantiate it with the same level of referenced argumentation that you would be expected to provide in an upper-division term paper.
- Groups of students enrolled this quarter may form registered study groups (see below). You may receive assistance from, and give assistance to, any member of your study group during the midterm. You are ultimately responsible for all your answers, even if you were given incorrect information from another member of your study group.
- You may not receive assistance from people not in your study group, either in person, by phone, electronically, or by any other means. A documented breach of this rule will result in your receiving an "F" in the course and being turned over to Student Judicial Affairs. If you know of someone who has broken this rule, please contact me.

**Registered study groups:** Many (but not all) students do better in a course when they study together. Here's an opportunity to make this work for you directly.

- A group consists of no fewer than three people and no more than seven.
- A study group must have met at least once, for a period of at least an hour, before each exam.
- **Prior to** each midterm exam, a member of the study group must turn in a *meeting roster* to Dr. Clark, at the beginning of class or during office hours. Remember that the exam starts at midnight, so the latest you can turn in the form is the day before. If you fail to turn in the form, everyone in the group must take the exam independently, with no help from the others.
- **Following** each midterm exam, a member of the study group must turn in an *exam roster* to Dr. Clark, at the beginning of class or during office hours.
- New study groups can be formed for each exam—if you don't like the members of your group, find or create another one.
- You may not give or obtain help during the exam from anyone not in your **current** study group.

**Final exam:** The final exam will be given on Wednesday, June 12, from 9:10 a.m. until 11:10 a.m., in the lecture room. You must be present for the final; there will be no makeup exams, and students unable to take the final exam will receive an incomplete grade in the course.

- The final exam is cumulative. It will consist of questions taken from the Blackboard midterm exams (they may be edited for clarity if students found them initially confusing), and up to 20% new questions, to cover material presented after the last midterm. It will consist of 50 multiple choice questions. You will provide your answers on a Scantron.
- No testing aids may be used on the final: no textbooks, exam guides, crib sheets, smart phones, laptops, calculators, or any other resource beyond a Scantron sheet and a #2 pencil.
- Registered study groups are of course encouraged to study together for the final, but they have no special privileges during the exam.

**My Plant Project:** In the second half of the quarter you will be assigned a plant species on campus, for which you will have to complete a worksheet. You will have to provide the correct information about that plant to receive full credit for the assignment. My Plant Project will be due the last day of lecture.

**Grading:** BOT 201 and BOT 201L are graded separately; if you are taking both, your grade in one will not affect your grade in the other.

Each assignment will be worth a specific percentage of the course grade, regardless of the number of questions or points it has. The percentages will be distributed as follows:

	Date	Percentage
Midterm 1	April 17–18	10%
Midterm 2	May 8–9	10%
Midterm 3	May 29–30	10%
My Plant Project	June 7	10%
Final	June 12	60%
<b>Total</b>		100%

90% = A, 80% = B, 70% = C, 60% = D, and < 60%=F. These are guaranteed minimums; the scale may be adjusted downward and plus-minus grading may be used for grades on either side of a cutoff, at the instructor's discretion.

**Course Materials:** Materials for the lecture (handouts and study guides) and for the lab (manuals for each lab) will be posted on the Blackboard site for this class. If you have trouble logging onto the Blackboard site, please call the I&IT help desk (909-869-6776).

### Lecture Schedule—Spring 2013

Date	Question	Lecture Topics	Reading
April 1	<i>César Chávez holiday</i>		
April 3	Do I have a seat? What're the requirements?	Roll, course requirements	
April 5	What is a plant?	Introduce plants and the prototypical plant cell	Ch. 1, Ch. 3
April 8	What makes plant cells special?	Organelles and cell walls	Ch. 3
April 10	How do plants cells split?	Plant cell cycle and an introduction to primary tissues	Ch. 3, Ch. 23
April 12	Are all plant cells the same?	Primary tissues	Ch. 23
April 15	What eats, shoots, and leaves?	Primary shoot anatomy and morphology	Ch. 25

April 17	Do plants, like people, get wider as they get older?	Secondary growth; begin first Blackboard exam	Ch. 26
April 19	Would you like to replace your epidermis with something more durable?	Secondary tissues	Ch. 26
April 22	Hey, what are these things in the soil?	Root anatomy and morphology	Ch. 24
April 24	What do plants do with their carbon?	CO <sub>2</sub> uptake, respiration and photosynthesis	Ch. 6, Ch. 7
April 26	If your carbon isn't broken, should you still fix it?	CO <sub>2</sub> uptake, respiration and photosynthesis	Ch. 6, Ch. 7
April 29	Exactly how many ways can plants do it? I mean, photosynthesize, not "it!"	Different photosynthetic strategies	Ch. 7
May 1	How do plants get water where it needs to go?	Water relations	Ch. 30
May 3	How sweet are these plants?	Water relations and phloem transport	Ch. 30
May 6	Why do they call it "plant food" if plants make their own food?	Nutrient relations	Ch. 29
May 8	Do plants experience puberty?	Finish nutrient relations and begin hormones; begin second Blackboard exam	Ch. 29, Ch. 27
May 10	Why is that plant behaving so strange?	Finish hormones and begin plant responses to the environment	Ch. 27, Ch. 28
May 13	Is that plant moving?	Responses to the environment	Ch. 28
May 15	Can you talk about it in mixed company?	Plant sex and the green plant life cycles	Ch. 8
May 17	How many generations do you have?	The different lineages of green plants and their characteristics	Ch. 12
May 20	Wow, do these little plants get around, or what?	Evolution of plant life on land and the nonvascular land plants	Ch. 15, Ch. 16
May 22	Who around here is missing their seeds?	Reproductive and physiological strategies of the ferns and their closest relatives	Ch. 17
May 24	Can you believe that there is an embryo in this thing?	The coal forests and the evolution of seed plants	Ch. 18
May 27	<i>Memorial Day</i>		
May 29	Wait a minute, which one of you is naked?	Reproductive strategies of gymnosperms; begin third Blackboard exam	Ch. 18
May 31	Where did you get those stamens?	Finish gymnosperms; general characteristics of angiosperms	Ch. 19
June 3	We have endosperm, yes we do. We have endosperm, how about you?	Evolution of flowering plants	Ch. 20
June 5	Wow, what happened to your petals?	Trends in angiosperm evolution	Ch. 20
June 7	Where are we now?	Review or catch-up	