



## BOTANY 100: CONCEPTS OF BOTANY

*This course: 1) does satisfy the SBCC GE requirement in Natural Sciences (p.82 2013-14 SBCC Catalog); 2) does satisfy SBCC IGETC transfer requirement for the Biol. Sciences (p.98 2013-14 SBCC Catalog); 3) is transferable to UC & CSU as a GE lab science course; 4) does not apply toward the SBCC biology major.*

**Instructor:** Dr. Matt Kay

**Email:** mckay@pipeline.sbcc.edu; **Phone:** (805) 730-5172

**Office hours:** M, W 12:30-2:30; T 9:30-10:30 in EBS 307; or email for appointment

**Lecture:** Monday and Wednesday, 11:10- 12:30, EBS 301

**Labs:** (all sections meet in EBS 201)

CRN 39143: Tues 11:10 – 2:15

CRN 31005: Weds 7:50 - 10:55am

CRN 33708: Tues 2:30 – 5:35

### Welcome to Botany 100!

In this course we will explore the fascinating biology of plants and their close relatives. In these organisms, we will discover some of the most fascinating adaptations and stories found in biology. You need them: your life depends upon them directly, and they enrich your quality of life immeasurably – if you don't believe it now, you soon will! If we are successful on our journey together, your view of plants – and your relationship with them - will forever be changed. For this journey we will need a few tools:

**Textbook (highly recommended):** *Botany: An Introduction to Plant Biology, 5<sup>th</sup> edition* (Mauseth). Available in the bookstore. Use the text to *prepare* for and review lecture material. Information in the text will support lecture material (see page 5).

**Supplemental books (recommended):** 1) *Dictionary of Root Words and Combining Forms* (Borror); 2) *Introduction to the Plant Life of Southern California* (Rundel and Gustafson).

**Lab notebook (required):** Purchase a composition style notebook for lab (SBCC bookstore). I prefer the black and white “marbled” cover notebooks, 7 ¾ x 10 ¼ inches, with blank pages.

**Your attitude (positive, required):** If you wish to sit passively and collect a grade, you are in the wrong class. I expect students to be prompt, courteous, and engaged.

**Pipeline:** If you have not already done so, you should log into and familiarize yourself with Pipeline. I will use Pipeline to communicate with you via email, so you should check Pipeline regularly for updates, reminders, or schedule changes. To log into Pipeline: Go to the SBCC homepage ([www.sbcc.edu](http://www.sbcc.edu)) and click on “Pipeline”. If you have difficulty accessing or using Pipeline, technical support is available at <http://www.sbcc.edu/support/contact/> or via phone (805 965-0581 x2949).

**Class website:** Course-related documents, including the syllabus, lecture outlines and quiz and exam keys will be posted on my course website at: <http://www.biosbcc.net/kay/> This will be an indispensable resource for you during this course – visit it frequently!!



### Course Requirements and Expectations

You are required to enroll in *and attend* both the lecture and lab portions of this course to receive course credit. If you have a habit of skipping class you will NOT succeed in this course. I expect you to be present at all lectures and labs. If you cannot attend a lecture, it is your responsibility to seek out a fellow student (or me) and get notes or other materials. Missing lab is simply not an option – if you have a conflict find me in advance. If you miss a lab, you will still need to complete the lab exercise(s) and make up the quiz – and this will only be allowed with an excused absence due to illness, family emergency, or circumstances cleared in advance with me.

Disruptive behavior will not be tolerated in lecture or lab. I expect you to behave as an adult – if that is confusing here are some firm ground rules:

- No cell phones, ipods...ipads...or whatever new electronic device will be invented and mass marketed to you between now and the end of the semester. Whatever it is, turn it off (unless taking notes on a laptop...).
- Arrive on time, don't shuffle for an early exit.
- Do not talk while the instructor or other presenters (it will be you at some point this semester...) are addressing the class...unless of course you have a question for the class.
- If you think you might be behaving disruptively, you probably are.

### ASSIGNMENTS AND GRADING

#### Assignments, points, and % of final grade

Activity	Points	% of final grade	Comments
<b>Lecture (525 pts)</b>			
Midterm 1	100	11.75%	Drop lowest midterm exam score, or if final is lowest then divide by 2 (i.e., final =11.75%) and keep 3 mid's *5 quizzes, open <u>notebook</u> , (not "open lecture notes")
Midterm 2	100	11.75%	
Midterm 3	100	11.75%	
Final exam	200	23.5%	
Quizzes 1-5*	5 @ 25 each = 125	14.75%	
<b>Lab (325 pts)</b>			
Assignments	15@10 each = 150	17.5%	Weekly lab activities, in your notebook (not collected, use to study for lab quizzes – see p. 4)
Weekly Lab Quizzes	10 @15 each = 150	17.5%	
Local flora ID exam	25	3%	Open notebook and "open plant press" (in wk 13 lab)
<b>Totals</b>	<b>850 pts</b>	<b>100%</b>	

#### Final grades for semester:

≥92% A; 91-89% A-; 88-87% B+; 86-84% B; 83-80% B-; 79-77% C+; 76-70% C; 69-60% D; ≤59% F



## GRADED ACTIVITIES – LECTURE

### **Midterm and final exams**

Midterms and the final exam will be comprised of multiple choice (“fill in the bubble”), fill in the blank, True/False, and short answer written questions. Bring a *Scantron* form and pencil to class on the day of midterm exams. These are half of your grade – come prepared to perform! They will be challenging and will draw directly from lecture material (see *Notebooks and organization*, below).

### **Lecture quizzes**

Lecture quizzes will be given periodically (see schedule for dates), and will be administered at the beginning of lecture. You will need ~20 minutes to complete quizzes. Students may use their personal notebooks to respond to questions, but no other materials (posted lecture notes, text book, internet, etc...) may be consulted. Referencing sources other than your personal notebook (**repeat: you may NOT use posted lecture notes**) will be considered cheating and you will receive a zero for that quiz (and incur my eternal wrath). Questions on quizzes will be similar to those asked on exams – so use quizzes as practice exams and study guides. You will need pen *and* pencil and paper to complete each quiz – but those tools should be brought to every lecture...right?

Quizzes are intended to reward good attendance, detailed notebooks, and staying on top of the material. In addition, even with open notes you will need to respond quickly and think on your feet (i.e., I will not ask you to simply transcribe your notebook). If you come to class, pay attention, and take good notes (a very important skill) you should enjoy and do great on quizzes. If not...you can only blame yourself!! Keep a tidy notebook that you bring to every class. The lowest quiz score will be dropped. **There will be no opportunity to make-up missed lecture quizzes.**

### **Notebooks and organization**

Making a reliable record of observations and events is an essential skill in science, as well as most other professions. To succeed in this class you will need to keep records/notes of lectures in two critical ways:

- 1) Lecture notes posted online. After each lecture I will post my notes. You should print these and keep them in a binder. Alternatively, if you prefer to not consume paper you can compile these in a folder on your personal computer.
- 2) Your personal lecture notebook. This will contain notes you take during lecture. Many drawings, figures, and anecdotes that I present in lecture will not appear in the posted lecture notes (and this is intentional!), but this material will figure prominently on exams and quizzes.

Although I will not directly grade your personal notebooks and organization of lecture notes, these are critical for success – you will not perform highly if you are unorganized. This is especially true for lecture quizzes, which are open note (personal notebooks only).



### **GRADED ACTIVITIES – LAB**

The lab component of this class is mandatory and you can not pass this class without passing the lab component. Labs are held every week at the time and place noted on page 1 of this syllabus. Lab sections are full: you must attend the lab for which you are enrolled, except under extenuating circumstances and with my approval.

#### **Lab quizzes**

12 lab quizzes will be administered on predetermined dates throughout the semester. Each is worth 15 points. **You will be allowed to drop your two lowest quiz scores, but there will be no opportunity to make-up missed lab quizzes.** Quizzes will generally cover material from the previous week's lab. So!! – be sure to correctly answer the questions from the previous week's lab assignment. If you arrive late, you will have only the time that remains of the 10-15 minute quiz period to complete the quiz. Be on time.

#### **Lab assignments**

Weekly lab exercises appear in the lab manual (available at bookstore) and **will be graded in lab, the day that each lab is completed!!** Do **NOT** leave lab without having me grade that day's assignment – do NOT blow off labs – you'll miss 25 possible points (lab quiz + lab exercise) each time you do...attend and participate! If you must miss a lab, clear it with me and come to an alternative section – space permitting.

#### **Local Flora identification**

Each week in lab, I will bring in 2-4 plants that you will: a) draw, b) preserve in a plant press as a lab group. You will have an open note (**BUT NOT OPEN plant press**) ID quiz on these ~20 specimens during lab week 13. The details of this quiz will be explained week 12 in lab. It is essential that you keep a clear and accurate record of these plants – we'll work on this together.

#### **Academic Honesty**

Academic dishonesty will not be tolerated in this course. SBCC has a strict policy on academic honesty and I have zero tolerance for any act of academic dishonesty. Academic dishonesty includes but is not limited to: (1) Cheating on an exam or quiz (e.g. looking at or copying from somebody else's exam, talking during an exam, using cell phones or texting, bringing prepared "cheat sheets", using translators or dictionaries); (2) Copying someone else's work or answers on any assignment; (3) Plagiarism (failing to properly cite material produced by others, or intentionally turning in work that is characterized as one's own).

#### **DSPS Students**

SBCC students with disabilities who are requesting accommodations for classes, college activities or tests should use the following SBCC procedure. (NOTE: This procedure also includes student requests to bring into classes service animals and/or personal service attendants who are not SBCC employees.

**Step 1:** Obtain documentation of your disability from a licensed professional. You may use the "Disability Verification Form" found at [www.sbcc.edu/dsps](http://www.sbcc.edu/dsps).

**Step 2:** Make an appointment to meet with a DSPS Specialist to review your documentation and discuss reasonable accommodations. To schedule a meeting, please call DSPS at (805) 730-4164.

**Step 3:** Bring your disability documentation to your DSPS appointment. The DSPS office is located in room 160 of the Student Services building.


**Step 4:** *Each semester*, reach written accommodation agreement with the DSPS Specialist and your instructor.

**Please complete this process in a timely manner to allow adequate time to provide accommodation.**

\*\*DSPS office: (805) 965-0581 x 2364, SS Building, room 160, [dsps@sbcc.edu](mailto:dsps@sbcc.edu)\*\*



**COURSE SCHEDULE\_Sept 30 corrections**

	Date	Lecture	Reading (Mauseth)	Lab
1: Matter, cells, and energy	1 Aug 21 Aug 23	- Botany, evolution, sci. method - Atoms, molecules, and cells	Ch 1 Ch 2, 3	Lab 1: Observation and perspective
	2 Aug 28 Aug 30	- Carbohydrates and proteins - Energy I: Respiration	Ch 2 Ch 11	Lab 2: Cells and microscopes
	3 Sept 4 Sept 6	- LABOR DAY HOLIDAY, NO CLASS - <b>Quiz 1 (Aug 21 – Aug 30)</b> - Energy II: Photosynthesis I	Ch 10	Lab 3: Aerobic and anaerobic respiration
	4 Sept 11 Sept 13	- Energy III: Photosynthesis II <del>- Energy IV: Photosynthesis III</del>	Ch 10 Ch 10	Lab 4*: <del>Lipids and soap</del> <del>*contains lecture</del> <del>–material for exams</del>
	5 Sept 18 Sept 20	- <b>Midterm 1 (Aug 21 – Sept 18)</b> - <del>Osmosis and diffusion – no lecture notes posted – but you must know the material presented in class!</del>	Ch 10  *graded activity in lecture today - must be present to win!!	Lab 5: <del>Osmosis and diffusion</del> Lipids and Soap: * <i>Contains material that will be covered on Midterm #2</i>
2: Growth, form, and function	6 Sept 25 Sept 27	- 1° tissues: overview, leaves <del>- 1° tissues: roots (notes posted)</del>	Ch 5 & 6; for lab 6 Ch 5	Lab 6: Leaves Ch 6
	7 Oct 2 Oct 4	- <b>Quiz 2 (Sept 20 – Oct 2)</b> 1° tissues: stems - Xylem and phloem function	Ch 7 <i>consult lecture notes</i>	Lab 7: Primary tissues (roots and stems) <i>Includes lecture on roots (notes posted 9/27)</i>
	8 Oct 9 Oct 11	- 2° tissues: wood and bark - <b>Quiz 3 (Oct 2 – Oct 9)</b> Secondary metabolites	Ch 8 <i>consult lecture notes</i>	Lab 8: Secondary tissues (wood and bark)
	9 Oct 16 Oct 18	- <b>Midterm 2 (Sept 20 – Oct 11)</b> - Algae, the plant-like protists	Ch 19; <i>lecture notes!</i>	Lab 9: Algae ( <i>Beach field trip – dress appropriately</i> )
3: Evolution and diversity	10 Oct 23 Oct 25	- Bryophytes and seedless vascular plants (ferns etc...) - Evolution of four plant lineages	Ch 20, 21  Ch 19; <i>lecture notes!</i>	Lab 10: Spore-producing plants (bryophytes and seedless vascular plants)
	11 Oct 30 Nov 1	- Gymnosperms - Angiosperms I <b>Quiz 4 (Oct 18 – Nov 1)</b>	Ch 22 Ch 9, 23	Lab 11: Gymnosperms ( <i>Campus field trip – dress appropriately</i> )
	12 Nov 6 Nov 8	- Angiosperms II - Seeds: adaptations and ecology	Ch 9, 23	Lab 12: Angiosperms I: flowers
4: Ecology	13 Nov 13 Nov 15	- <b>Midterm 3 (Oct 18 – Nov 8)</b> - Selective breeding, GMOs, and <i>The Botany of Desire</i>	None; attend lecture!	Lab 13: Angiosperms II: fruits Prepare for ID exam in Wk 14
	14 Nov 20 Nov 22	- Kingdom Fungi - Plant communities I	Ch 24 Ch 26 & 27 	Lab 14*: Fungi <i>*contains exam material</i> <b>Local flora ID quiz</b>
	15 Nov 27 Nov 29	- Plant communities II - Ecosystem services <b>Quiz 5 (Nov 15-Nov 29)</b>	Ch 26 & 27 Ch 26 & 27	Lab 15: Rattlesnake Canyon field trip (RAIN OR SHINE!)

**Final Exam: Monday, Dec. 4; 11:00am-1:00pm (EBS 301)**



**Official SBCC course content and objectives for Botany 100**

**Student learning outcomes:** Students who successfully complete this course will be able to:

1. Describe the biology of plants including their anatomy, physiology, and their ecological and organismal diversity.
2. Describe the biology of plant-like organisms including their anatomy, physiology, and their ecological and organismal diversity.

**Course Content and Scope:**

Science and the scientific method, the philosophy and role of science in society.

Introduction to eukaryotic, bacterial, and archean cell structure and function

Tissues of the plant body: meristematic tissues, primary tissues, secondary tissues, stems, roots, leaves, flowers, fruits, and seeds.

Pollination, fertilization, fruit and seed set, and seed germination

The chemical and physical properties of the water molecule

Water and food transport in the plant body.

Processes of photosynthesis and respiration

Mechanisms of heredity, and Mendelian genetics

Plant growth regulating substances

Diversity of plant groups on Earth



### Course grade sheet

Here is a “scorecard” to help you keep track of your grade in the course (needless to say, you should keep the assignments themselves as references for studying). Please do not ask me to calculate your grade (you should never do this in school or life – it implies that you are unorganized, incapable, lazy, or some combination of these attributes.)

#### Lab Assignments

1) \_\_\_/10

2) \_\_\_/10

3) \_\_\_/10

4) \_\_\_/10

5) \_\_\_/10

6) \_\_\_/10

7) \_\_\_/10

8) \_\_\_/10

9) \_\_\_/10

10) \_\_\_/10

11) \_\_\_/10

12) \_\_\_/10

13) \_\_\_/10

14) \_\_\_/10

15) \_\_\_/10

#### Lab Quizzes

1) \_\_\_/15

2) \_\_\_/15

3) \_\_\_/15

4) \_\_\_/15

5) \_\_\_/15

6) \_\_\_/15

7) \_\_\_/15

8) \_\_\_/15

9) \_\_\_/15

10) \_\_\_/15

11) \_\_\_/15

12) \_\_\_/15

#### Lecture Quizzes

1) \_\_\_/25

2) \_\_\_/25

3) \_\_\_/25

4) \_\_\_/25

5) \_\_\_/25

#### Midterm Exams

1) \_\_\_/100

2) \_\_\_/100

3) \_\_\_/100

#### Final Exam

1) \_\_\_/200

#### Local flora ID (wk 14, in lab)

1) \_\_\_/25



**Santa Barbara City College  
2017-2018 Academic Calendar**

May 2017						
S	M	Tu	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

June 2017						
S	M	Tu	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

July 2017						
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16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

August 2017						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

September 2017						
S	M	Tu	W	Th	F	S
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10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

October 2017						
S	M	Tu	W	Th	F	S
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8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

November 2017						
S	M	Tu	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

**MAY 2017**

- 13 Spring Semester Ends
- 15 Summer Session 1 Begins
- Varies Last Day to Drop Classes without 'W'
- 26 Last Day to Petition for Pass/No Pass Grading
- 29 Memorial Day, Holiday

**JUNE 2017**

- 24 Summer Session 1 Ends
- 26 Summer Session 2 Begins
- Varies Last Day to Drop Classes without 'W'

**JULY 2017**

- 4 Independence Day, Holiday
- 7 Last Day to Petition for Pass/No Pass Grading

**AUGUST 2017**

- 5 Summer Session 2 Ends
- 17-18 Scheduled Faculty Flex Days
- 21 Fall Semester Begins

**SEPTEMBER 2017**

- 2 Last Day to Drop Classes Without 'W'  
*(with Enrollment/Tuition Refund)*
- 4 Last Day to Drop Classes Without 'W'  
*(without Enrollment/Tuition Refund)*
- 4 Labor Day, Holiday
- 22 Last Day to Petition for Pass/No Pass Grading

**OCTOBER 2017**

- 20 Last Day to Withdraw from Classes/College

**NOVEMBER 2017**

- 10 Veterans Day, Observance
- 23-25 Thanksgiving Vacation

**DECEMBER 2017**

- 2 Last Day of Instruction
- 4-9 Final Exams
- 9 Fall Semester Ends
- 10 Winter Vacation *(through January 10)*
- 25 Christmas, Holiday

**JANUARY 2018**

- 1 New Year's Day, Holiday
- 11-12 Scheduled Faculty Flex Days
- 15 Martin Luther King, Jr. Day, Holiday
- 16 Spring Semester Begins
- 27 Last Day to Drop Classes Without 'W'  
*(with Enrollment/Tuition Refund)*
- 28 Last Day to Drop Classes Without 'W'  
*(without Enrollment/Tuition Refund)*

**FEBRUARY 2018**

- 15 Last Day to Petition for Pass/No Pass Grading
- 16 Lincoln's Birthday, Observance
- 19 Washington's Birthday, Holiday

**MARCH 2018**

- 16 Last Day to Withdraw from Classes/College
- 26-31 Spring Break

**MAY 2018**

- 5 Last Day of Instruction
- 7-12 Final Exams
- 11 Commencement
- 12 Spring Semester Ends
- 28 Memorial Day, Holiday

Board approved 11/10/2016

Blue = Term Begins    Yellow = Final Exams    Green = Campus Closed    Orange = Spring Break

December 2017						
S	M	Tu	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

January 2018						
S	M	Tu	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

February 2018						
S	M	Tu	W	Th	F	S
				1	2	3
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

March 2018						
S	M	Tu	W	Th	F	S
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

April 2018						
S	M	Tu	W	Th	F	S
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8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

May 2018						
S	M	Tu	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

June 2018						
S	M	Tu	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30