



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.sbccc.edu; **Phone:** (805) 730-5172

Office hours: M, W 12:30-1:30; T 10:30-1:30 in EBS 307; or email for appointment

Lecture: Monday and Wednesday, 11:10- 12:30, EBS 309

Labs: (all sections meet in EBS 201)

CRN 61764: Tues 11:10 – 2:15pm

CRN 61494: Weds 7:50 - 10:55am

CRN 61493: Tues 2:30 – 5:35pm

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 plants: 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 (recommended): *Botany: An Introduction to Plant Biology, 5th 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)

Lab notebook (required): You must keep detailed notes of information presented (i.e., in pre-lab lectures), as well as your observations and activities during lab. You will need these notes to succeed on lab quizzes. I recommend a composition-style notebook (~10" x 7.5").

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: 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.sbccc.edu) and click on "Pipeline". If you have difficulty accessing or using Pipeline, technical support is available at <http://www.sbccc.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.
- 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
Lecture (525 pts)			
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
Midterm 2	100	11.75%	
Midterm 3	100	11.75%	
Final exam	200	23.5%	
Quizzes 1-5*	5 @ 25 each = 125	14.75%	*5 quizzes, open <u>notebook</u> , (not "open lecture notes")
Lab (325 pts)			
Attendance, note-book, participation	15@10 each = 150	17.5%	Awarded each week during lab (noted by instructor)
Weekly Lab Quizzes**	10 @15 each = 150	17.5%	**Take 12 lab quizzes, two lowest scores are dropped
Local flora ID exam	25	3%	Open notebook (in wk 14 lab)
Totals	850 pts	100%	

Final grades for semester:

≥92% A; 91-90% A-; 89-87% 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, diagrams, 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.**

Lecture 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 notebook

You are required to maintain a lab notebook that contains: 1) complete record of information that I present during each lab, as well as; 2) detailed notes and drawings of the observations you make during lab activities. I recommend a composition-style notebook (~10 x 7.5 inches).

Lab attendance and exercises (completed in your lab notebook)

Your attendance and participation in weekly lab exercises will be graded in lab, the day that each lab is completed!! Do NOT skip labs – you'll miss 25 possible points (lab quiz + lab exercise) each time you do. If you must miss a lab, clear it with me and attend an alternate section.

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 cover material from the previous week's lab. Keep thorough notes and study them! If you arrive late, you will have only the time that remains of the 10-15 minute quiz period to complete the quiz. Arrive on time for labs!

Local Flora identification

Each week in lab, I will bring in 2-3 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 14. The details of this quiz will be explained week 12/13 in lab.

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

Accommodations for Students with Disabilities:

Disabled Student Programs and Services (DSPS) coordinates all academic accommodations for students with documented disabilities at Santa Barbara City College. If you have, or think you might have, a disability that impacts your educational experience in this class please contact DSPS to determine your eligibility for accommodations. DSPS is located in the Student Services (SS) Building, Room 162. Their phone number is 805-730-4164.

If you are already registered with DSPS please submit your accommodation requests via the 'DSPS Online Services Student Portal' as soon as possible. Once submitted and confirmed please visit with me about your specific accommodations.

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



COURSE SCHEDULE (with one-week delayed start due to Thomas fire & floods)

	Date	Lecture	Reading (Mauseth)	Lab
1: Matter, cells, and energy	1 Jan 22 Jan 24	- Course introduction, natural selection, scientific method - Atoms and molecules	Ch 1 (lecture in lab) Ch 2	Lab 1: Scientific method and adaptation
	2 Jan 29 Jan 31	- Cells and life on Earth - Carbohydrates and proteins Quiz 1 (Jan 22 – Jan 29)	Ch 3 Ch 2	Lab 2: Microscopes and cells
	3 Feb 5 Feb 7	- Cellular Respiration, fermentation - Photosynthesis I: ATM [CO ₂ /O ₂]	Ch 11 Ch 10	Lab 3*: Lipids and soap <i>*contains new lecture material for MT#1</i>
	4 Feb 12 Feb 14	- Photosynthesis II: light reactions - Photosynthesis III: C fixation / light-independent reactions Quiz 2 (Feb 5 – Feb 12)	Ch 10 Ch 10	Lab 4: Aerobic and anaerobic respiration (cellular respiration & fermentation)
	5 Feb 19 Feb 21	- NO CLASS – HOLIDAY (GW B'day) - Midterm 1 (Jan 22 – Feb 14)	Ch 5 & 6	Lab 5: Osmosis and diffusion
2: Growth, form, function	6 Feb 26 Feb 28	- 1° tissues: leaves - 1° tissues: stems	Ch 5	Lab 6: Leaves (read Ch 5, 6)
	7 Mar 5 Mar 7	- 1° tissues: roots - Xylem and phloem function Quiz 3 (Feb 26 – Mar 5)	Ch 7 <i>lecture notes</i>	Lab 7: Primary tissues of stems and roots
	8 Mar 12 Mar 14	- 2° tissues: wood and bark - Secondary metabolites	Ch 8 <i>lecture notes</i>	Lab 8: 2° tissues: wood and bark
	9 Mar 19 Mar 21	- Midterm 2 (Feb 26 – Mar 14) - 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	SPRING BREAK – NO CLASS (March 26 – March 30)		
	11 Apr 2 Apr 4	- Bryophytes and seedless vascular plants (ferns etc...) - Plant “communication” – is it real?	Ch 20, 21 <i>lecture notes</i>	Lab 10: Spore-producing plants
	12 Apr 9 Apr 11	- Gymnosperms - Angiosperms I Quiz 4 (Mar 21 – Apr 9)	Ch 22 Ch 9, 23	Lab 11: Gymnosperms (<i>Campus field trip – dress appropriately</i>)
	13 Apr 16 Apr 18	- Angiosperms II - Seeds: adaptations and ecology	Ch 9, 23 <i>lecture notes</i>	Lab 12: Angiosperms I: flowers
4: Ecology and humans	14 Apr 23 Apr 25	- Midterm 3 (Mar 21 – Apr 18) - Selective breeding, GMO's, and <i>The Botany of Desire</i>	<i>lecture notes</i>	Lab 13: Angiosperms II: fruits Prepare for ID exam in Wk 14
	15 Apr 30 May 2	- Kingdom Fungi - Plant communities I	Ch 24 Ch 26	Lab 14*: Fungi <i>*contains lecture material for Exam. Local flora ID quiz</i>
	16 May 9 May 11	- Plant communities II - Ecosystem services Quiz 5 (Apr 25 – May 9)	Ch 27 Ch 27	Lab 15: Rattlesnake Canyon field trip

Final Exam: Wednesday, May 16; 11:00am-1:00pm (EBS 309)



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 archaean 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						
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					

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
					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

October 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				

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
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			

March 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

April 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					

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