



BOTANY 100: CONCEPTS OF BOTANY – ONLINE

CRN 33708 CRN 39143

This course: 1) does satisfy the SBCC GE requirement in Natural Sciences (p.82 2013-14 SBCC Catalog); 2) does satisfy IGETC transfer requirement for the Biol. Sciences (Area 5B) with a lab (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 boil. major.

Instructor: Dr. Matt Kay

Email: mckay@sbcc.edu; **PLEASE DO NOT MESSAGE ME THROUGH CANVAS!**

Office hours (via Zoom): By appointment, ANYTIME! Email me at mckay@sbcc.edu
(See Zoom link on Canvas)

Lecture: Online, asynchronous, posted on Canvas.

Lab: Online, asynchronous, posted on Canvas. Labs are mandatory, there is no “lecture only” registration option for this course.

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 our journey together, we will need a few tools:

Canvas Page: The heart of this class is the Canvas page. You will find all course content, information, and assignments linked there. This syllabus merely explains the course structure, but the content and assignments are accessed via Canvas. Go there daily!

Pipeline/SBCC email account: I will use Pipeline to communicate with you via email, check your SBCC email account often! (I will not email you from Canvas, or I will do so very infrequently.) To log into Pipeline: Go to the SBCC homepage (www.sbcc.edu) and click on “Pipeline”. Email me if you have problems.

Textbooks (“required” so that grants will cover cost – you don’t need the textbook to succeed in this class. See P. 3 of this syllabus; I will explain more during 1st lecture):

- 1) *Raven Biology of Plants, 8th edition* (Evert and Eichhorn). I repeat: you do NOT need this book to succeed in this course, the posted lecture notes are more important. Information in the text will provide broader context for lecture material (see page 3).
- 2) *Dictionary of Root Words and Combining Forms* (Borrer). *You should get this book!!!*

Lab notebook (required): You must keep detailed notes of your observations and activities during lab. You will photo and upload your work. I recommend a composition-style notebook (see Labs, below).



Course Requirements and Expectations

You are expected to be engaged and punctual in this course. You are required to submit all assignments ON TIME (i.e., by the due date posted in Canvas). If you have a habit of procrastinating, please work with me to overcome this! Reach out to me for helpful tips!

ASSIGNMENTS AND GRADING

Assignments, points, and % of final grade

Activity	Points	% of final grade	Comments
Lecture (355 pts)			
Midterm 1	50	7.4%	Midterms are 50 questions, 1 pts each.
Midterm 2	50	7.4%	See description
Midterm 3	50	7.4%	Final is cumulative. 100 questions, 1 pt.
Final exam	100	14.8%	each. See description
"Botany Around Me" (BAM) assignment	3 @ 35 each = 105	15%	A Discussion assignment – see description in Week 3 Module!
Lab (325 pts)			
Lab Notebook, uploaded weekly	15 @ 20 pts each = 300	44%	Notebook work is uploaded each week – we'll practice ☺
Local flora ID exam	25	3.7%	Taken during Lab 15
Totals	680 pts	100%	
Extra Credit (37.5 pts)			
Pre-course survey	5 pts	0.75%	Due no later than 11:59pm on Jan 19!
Syllabus & Canvas quiz	10 pts	1.5%	Due no later than 11:59pm on Jan 19!
Practice uploading lab notebook	10 pts	1.5%	Due no later than 11:59pm on Jan 19!
Optional BAM #4	10 pts	1.5%	Due by last Friday of semester (May 7)

Final grades for semester:

≥100-93% A; 92-90% 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-blank, True/False, diagrams with labels to identify, and similar questions. They will cover material discussed in lecture (i.e., not labs). They will be administered via Canvas.

"Botany Around Me" assignments

For this assignment, I want you to make an observation about the world around you that is informed by what you've learned in this class. I then want you to write a paragraph about the botanical and evolutionary significance of what you've observed/perceived. This needs to be substantive, do not BS me on these!! See the example and grading rubric on the Canvas page. I want you to apply what you've learned, and to think through the lens of natural selection.



Specifically, I want you to relate your observation to some aspect of increased survival and reproduction. You can do this for just about any plant or plant part (e.g., French fries!).

Lecture notebooks and organization

Making a reliable record of observations and events is an essential skill in science, as well as most other professions. Although this is an online class, your success will depend upon your willingness and ability to ACTIVELY study the material. Step #1 of active studying is to print or write a written record of the material so that you can interact with it physically (i.e., write notes, questions, clarifying diagrams, etc.)

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 of the lecture to Canvas. These serve as the (FREE) textbook for this course! You do not need to purchase the textbook to succeed in this class! Although this is an online course, I strongly recommend that you print these notes, or re-write them into your personal notebook (see below). Making a physical record of course lectures and notes is an important part of ACTIVE STUDYING. Writing the notes will allow you to annotate them and interact with the material actively. 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 from lecture videos. 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.

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 or if you simply read material from the Canvas page and passively watch videos. Please see the table below for examples of active vs. passive studying

Examples of Active vs. Passive Studying: Advice for Success in Botany 100 (and beyond...)

Passive studying (do NOT do this)	Active studying (do this instead!)
Watch posted lecture videos while relaxing or while distracted; take no notes	Watch posted lecture videos and: 1) take notes, 2) draw important diagrams with instructor, 3) Write down/draw definitions or concepts that are difficult to remember or understand
Read over the posted lecture notes on the computer screen	Print the notes or write them out into your notebook so that you can interact with them physically: write notes, questions, clarifying diagrams, etc.
Study alone and infrequently	Study OFTEN: both ALONE and in GROUPS!! Participate in discussion groups, attend tutor hours
Study in a distracted atmosphere	Create or find a quiet space where you can concentrate
Remain aloof (unengaged) with professor	Attend synchronous lectures and ask questions, or visit Zoom office hours to discuss material that you do not understand
Assume that the material presented in this class is not around you at all times	Apply the information in this class to make your world come ALIVE!



GRADED ACTIVITIES – LAB

The lab component of this class is mandatory and you can not pass this class without passing the lab component.

Lab notebook

You are required to maintain a lab notebook. Each week, you will photograph and upload (as a PDF) your responses and illustrations from the week's lab. I have detailed instruction on how to do this in the Canvas page (see the "Getting Started / Week 0" Module), and a **10 point extra credit assignment to encourage you learn the steps prior to Week 1 of the course** (again, see the "Getting Started / Week 0" Canvas Module).

I recommend a composition-style notebook (~10 x 7.5 inches), with unlined (i.e., blank) pages.

Your lab notebook should contain the following material each week:

- 1) A complete record of any chalkboard work that I create and share (via posted videos) during the introduction to each lab
- 2) Detailed notes and drawings of the observations you make during lab activities. Within each lab activity, I include clear instructions on what to include in the lab notebook.

Lab submissions and due dates

You must **submit a PDF of your lab notebook work by the Friday of each week**, for that week's lab. Instructions on how to do this, as well as an extra credit practice for photographing and uploading your lab work, is posted in the "Getting Started / Week 0" Canvas Module.

Local Flora identification

Each week in our online lab (posted in Canvas), I will present you with 2-3 plants that you will draw and describe in great detail from photographs on Calflora. This is a fun way to learn a handful of local plants. The Local Flora activity is described in great detail in Lab 1. You will have an open note ID quiz on these ~20 specimens during Lab. Details will be presented later.

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.



Fall 2023, Botany 100 COURSE SCHEDULE (subject to change)

	Weeks	Lectures	Reading (Raven)**	Labs
1: Matter, cells, and energy	1 Aug 28 - Sep 1	1) Course introduction, reproduction, and natural selection 2) Atoms and molecules	Ch 11 N/A; <i>Lecture notes</i>	Lab 1: Binomial nomenclature, local flora intro, and adaptation
	2 Sep 4-8	3) Cells 4) Carbohydrates	Ch 3 Ch 2	Lab 2: Microscopes and cells
	3 Sep 11-15	5) Proteins 6) Cellular Respiration, fermentation BAM I: due Sunday Sept 17, 11:59pm	Ch 2 Ch 6	Lab 3: Lipids; fats in food
	4 Sep 18-22	7) Photosynthesis I: ATM [CO ₂ /O ₂] 8) Photosynthesis II: light reactions	Ch 7 Ch 7	Lab 4: Carbon Cycle
	5 Sep 25-29	9) Photosynthesis III: C fixation / Light- independent reactions Exam) Midterm 1 (Lectures 1-9); Due Wednesday by 11:59pm	Ch 7	Lab 5: Osmosis and diffusion; Midterm exam review
2: Growth , form, function	6 Oct 2-6	10) 1° tissues: leaves 11) 1° tissues: stems	Ch 23, 25 Ch 23, 25	Lab 6: Leaves (optional read Ch 5, 6)
	7 Oct 9-13	12) Xylem and phloem function I 13) Xylem and phloem function II BAM II: due Sunday Oct 15, 11:59pm	N/A; <i>Lecture notes</i> N/A; <i>Lecture notes</i>	Lab 7: Primary tissues of stems and roots
	8 Oct 16-20	14) 2° tissues: wood and bark 15) Secondary metabolites	Ch 26 N/A; <i>Lecture notes</i>	Lab 8: 2° tissues: wood and bark
	9 Oct 23-27	Exam) Midterm 2 (Lectures 10-15); Due Monday by 11:59pm 16) Algae, the plant-like protists	Ch 15; <i>lec. notes</i>	Lab 9: Algae
	10 Oct 30- Nov 3	17) Bryophytes and seedless vascular plants (ferns etc...) 18) TBD	Ch 16, 17	Lab 10: Spore-producing plants
3: Evolution and diversity	11 Nov 6-10	19) Gymnosperms 20) Angiosperms I	Ch 18 Ch 19	Lab 11: Gymnosperms
	12 Nov 13-17	21) Angiosperms II 22) Seeds: adaptations and ecology BAM III: due Sun. Nov 19, 11:59pm	Ch 19, 20 <i>lecture notes</i>	Lab 12: Angiosperms: flowers and fruits
	13 Nov 20-24	Exam) Midterm 3 (Lectures 16-22); Due Monday by 11:59pm 23) Fruits; <i>The Botany of Desire</i>	N/A; <i>Lecture notes</i>	Lab 13: Virtual field trip - Lotusland
4: Ecology and humans	14 Nov 27 - Dec 1	24) Kingdom Fungi 25) Plant communities I	Ch 14 N/A; <i>Lecture notes</i>	Lab 14: Virtual field trip – SBBG
	15 Dec 4-8	26) Plant communities II 27) Ecosystem services BAM IV: due Sunday Dec 10, 11:59pm (10 points extra credit)	N/A; <i>Lecture notes</i> N/A; <i>Lecture notes</i>	Lab 15: Local flora ID quiz

- ** Textbook reading is for further context. It is not necessary to succeed in Bot100. Focus on posted lecture notes
- Midterm exams due by 11:59pm on dates listed above
- Final Exam (Lectures 1-27): submit no later than Monday, December 11, by 11:59pm



Official SBCC course content and objectives for Botany 100

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

1. BOT100 SLO1 - Describe fundamental processes operative throughout botany and plant biology, including evolution via natural selection, sexual reproduction, photosynthesis, basic chemistry, and biochemical processes (cellular respiration, fermentation, photosynthesis)
2. BOT100 SLO2 - Describe the anatomy and physiology of plants and plant-like organisms
3. BOT100 SLO3 - Compare and contrast the major evolutionary lineages of plants and plant-like organisms, including important structural features of each lineage, ecological importance, and human uses

Course Content and Scope:

Lecture Content	Lab Content
<ul style="list-style-type: none"> • Science and the scientific method. The role of science in our society. The philosophy of science. • Introduction to eukaryotic, bacterial and archean cell structure and function. • Tissues and organs 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. • The process of photosynthesis. • The process of cellular respiration. • The mechanisms of heredity, and Mendelian genetics. • Plant growth regulating substances. • The diversity of plant groups on Earth. 	<ul style="list-style-type: none"> • Designing and interpreting scientific experiments. • Tissues and organs 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. • The process of photosynthesis. • The process of cellular respiration. • The mechanisms of heredity, and Mendelian genetics. • Plant growth regulating substances. • The 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.)

Your grades are also tracked in the Canvas Gradebook, but use this if you prefer to have a paper record.

Lab Assignments

1) ____/20

2) ____/20

3) ____/20

4) ____/20

5) ____/20

6) ____/40

7) ____/20

8) ____/20

9) ____/20

10) ____/20

11) ____/20

12) ____/20

13) ____/20

14) ____/20

“Botany around me”

1) ____/35

2) ____/35

3) ____/35

Midterm Exams

1) ____/50

2) ____/50

3) ____/50

Final Exam

1) ____/100

Local Flora ID

1) ____/25



MAY 2023						
SUN	MON	TUE	WED	THU	FRI	SAT
	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 2023						
SUN	MON	TUE	WED	THU	FRI	SAT
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JULY 2023						
SUN	MON	TUE	WED	THU	FRI	SAT
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30	31					

AUGUST 2023						
SUN	MON	TUE	WED	THU	FRI	SAT
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SEPTEMBER 2023						
SUN	MON	TUE	WED	THU	FRI	SAT
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OCTOBER 2023						
SUN	MON	TUE	WED	THU	FRI	SAT
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29	30	31				

NOVEMBER 2023						
SUN	MON	TUE	WED	THU	FRI	SAT
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

SANTA BARBARA CITY COLLEGE 2023-2024 Academic Calendar

MAY 2023

20 Spring Semester ends
29 Memorial Day, Holiday

Board Approved:
12/15/2022

JUNE 2023

5 10-Week Summer Term Begins
Varies Last Day to Drop Classes without 'W'
Varies Last Day to Petition for Pass/No Pass Grading
19 Juneteenth, Holiday

JULY 2023

4 Independence Day, Holiday

AUGUST 2023

12 Summer Term Ends
24-25 Faculty and Staff In-Service Days
28 Fall Semester Begins

SEPTEMBER 2023

4 Labor Day, Holiday
9 Last Day to Drop Classes without 'W' (with Refund)
10 Last Day to Drop Classes without 'W'
(without Enrollment/Tuition Refund)*

OCTOBER 2023

27 Last Day to Withdraw from Classes/College

NOVEMBER 2023

10 Veterans Day, Observance
23-25 Thanksgiving, Holiday

DECEMBER 2023

8 Last Day to Petition for Pass/No Pass Grading
9 Last Day of Instruction
11-16 Final Exams
16 Fall Semester Ends
18-Jan 21 Winter Vacation
22-Jan 1 Christmas Holiday Break

JANUARY 2024

1 New Year's Day, Holiday
15 Martin Luther King, Jr. Day, Holiday
22 Spring Semester Begins

FEBRUARY 2024

2 Faculty and Staff In-Service (1pm-5pm)
3 Last Day to Drop Classes without 'W' (with Refund)*
4 Last Day to Drop Classes without 'W'
(without Enrollment/Tuition Refund)*

16 Lincoln's Birthday, Holiday
19 Washington's Birthday, Holiday

MARCH 2024

22 Last Day to Withdraw from Classes/College
25-30 Spring Break (may change depending on SBUSD)

MAY 2024

10 Last Day to Petition for Pass/No Pass Grading
11 Last Day of Instruction
13-18 Final Exams
17 Commencement
18 Spring Semester Ends
27 Memorial Day, Holiday

JUNE 2024

3 10-Week Summer Term Begins
19 Juneteenth, Holiday

* Online Services Only

Term Begins Final Exams Campus Closed Spring Break

DECEMBER 2023						
SUN	MON	TUE	WED	THU	FRI	SAT
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31						

JANUARY 2024						
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FEBRUARY 2024						
SUN	MON	TUE	WED	THU	FRI	SAT
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MARCH 2024						
SUN	MON	TUE	WED	THU	FRI	SAT
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31						

APRIL 2024						
SUN	MON	TUE	WED	THU	FRI	SAT
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28	29	30				

MAY 2024						
SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
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JUNE 2024						
SUN	MON	TUE	WED	THU	FRI	SAT
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