

BIOL 1050-006 "General Biology 1"
CSU Stanislaus
Course Syllabus

Instructor: Dr. Michael Fleming

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Office Hours: Mon 1-2pm, Tu 2:30-3:30pm, Th 8-9am, or by appointment.

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Lectures: Tuesdays & Thursdays 9:30 – 10:45am, 101 Naraghi Hall (a.k.a N 101)

Pre-requisite: Pass BIOL 1010 with a C or better, or high school biology with a B or better.

Course Description: The purpose of BIOL 1050 (and later, BIOL 1150) is twofold: (1) to introduce students to the breadth of the biological sciences and (2) to help beginning biology majors master fundamental concepts, theories, and skills needed for success in later courses. This course is the first in the two-course majors' intro biology series, and emphasizes cellular and molecular biology, genetics, and microevolution. Course learning objectives will be met through a combination of lecture and lab experiences. **A grade of C- or better is required to move forward into General Biology 2 (BIOL 1150).**

This is a survey course, meaning we will cover a lot of material at a rapid pace. **It is critical that you spend considerable time outside of class actively studying to be successful in the course.** Classes meet face-to-face twice a week, and you will frequently access an online platform called Mastering Biology to reinforce concepts covered in class. I will ask you to think at high cognitive levels beyond basic memorization of facts and how to apply what you learn in this class to choices you make in your life and professional career. **This course is fast paced, language intensive, and uses basic algebra and statistics.** *If you are currently in or still need to take ENGL 1000, ENGL 1001, ENGL 1006, MATH 103, MATH 106 or MATH 110, please consider taking BIOL 1050 another time!*

Lab: There is a separate required lab section for this class. Along with this lecture section, you should be enrolled in one of the following lab sections:

Section	Day and Time	Lab Instructor
BIOL 1050-007	Wed. 6:00 – 8:50pm	Channing
BIOL 1050-008	Tues. 2:00 – 4:50pm	Cooper
BIOL 1050-009	Thur. 2:00 – 4:50pm	Cooper
BIOL 1050-010	Thur. 6:00 – 8:50pm	TBA

All lab sections meet in Naraghi 211. Note that your lab course will have a separate syllabus and course page in Blackboard, and you will need to buy the required lab manual. Points earned in lab factor into your overall BIOL 1050 grade; you will receive only one grade for BIOL 1050 despite being enrolled in two separate sections.

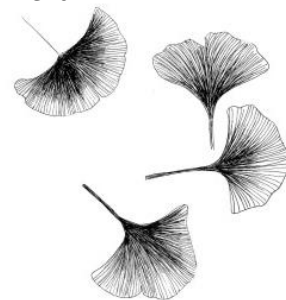
I am a firm believer in reinforcing concepts learned in lecture with activities in lab that illustrate these concepts. Data support the hypothesis that students in science lecture courses do better if they take the relevant lab in the same semester. I will endeavor to reinforce, assess, and keep pace with concepts and skills you learn in lab.

Text: *Campbell Biology, 10th edition* by Reece et al. The one you get at CSU Stan bookstore is a loose-leaf version but you can also find the regular version easily online, albeit probably for more money. The new text from our bookstore comes with an access code for a website called Mastering Biology; if you get a used version you still need to purchase MB through the text publisher's website. You should bring the relevant sections of the text to class with you to follow along. Students who don't bring the text to class generally earn lower grades than those who do.

Announcements: Check Blackboard (Bb) often for updates, lecture slides, study guides, etc. Note that your lab section will have a separate Blackboard page; that instructor may or may not utilize it.

Course Goals: In a broad sense, when completing this class you should be able to:

1. *Demonstrate your ability to think like a biologist;*
2. *Speak & write coherently about biology with biologists and non-biologists alike;*
3. *Apply biological knowledge to make informed decisions in your life.*



More specific to biology, you should be able to articulate how:

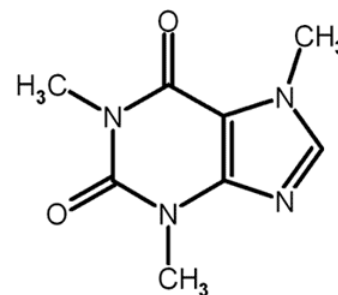
1. *All living things arise from a common ancestor.*
2. *Biological structures exist at all levels of organization, from molecules to ecosystems.*
3. *A structure's physical and chemical characteristics influence its interactions with other structures, and therefore its function.*
4. *Biological molecules, genes, cells, tissues, organs, individuals, and ecosystems interact to form complex systems.*
5. *Cells/organs/organisms have multiple mechanisms to perceive and respond to changing environmental conditions.*
6. *Energy and matter flow between organisms and the abiotic environment.*
7. *Organisms have complex systems that integrate internal and external information, incorporate feedback control, and allow them to respond to changes in the environment.*
8. *Organisms inherit genetic and epigenetic information that results in their physical and behavioral characteristics.*
9. *Species evolve over time, and new species can arise, when allele frequencies change due to mutation, natural selection, gene flow, and genetic drift.*

As learners and citizens of this class you should be able to:

1. *Practice self-assessment and reflection while developing the necessary study skills for success in science coursework.*
2. *Use scientific inquiry as a means of understanding the natural world.*
3. *Make connections between the facts of science and its relevance to broader societal issues.*
4. *Demonstrate a professional and respectful manner when communicating and working with peers, instructors, and staff, as practice for success in the workplace and community.*

My Teaching Philosophy: My teaching philosophy is grounded in high expectations, accountability, and belief in appropriate behavior conducive to learning. Five principles guide my teaching philosophy:

1. *All students can become lifelong learners.*
2. *Significant change requires significant commitment and time.*
3. *Struggle is a necessary and important part of life.*
4. *Students must accept responsibility for their learning progress.*
5. *I will never do for students what students can do for themselves.*



That said, I will work hard and use multiple ways of learning to help you succeed in this course. Hopefully we'll also have a few laughs as we go along.

Participation and Attendance: Please arrive to class on time and ready to learn. I expect all students to attend every class session. Plenty of research shows that final grades are positively correlated with attendance. To this end **you will be able to earn *classroom activity* points in every class meeting, but cannot make them up if you are absent.** Thus, if you miss more than two class meetings, your final grade will be negatively affected! Assignments are due at the start of class (or on your way out if we did it in class). You will talk and work frequently in small groups, and sometimes present your ideas to the entire class. Most importantly, please do not disrupt the learning environment, rights, and property of others. Of course, all gadgets not conducive to learning in the course, such as cell phones/music devices/etc should remain unused during class. Be honest, hold yourself accountable for your actions, and hold me accountable for mine.

Respectful Classroom Atmosphere: This class is a “judgment-free zone” at all times. This means that when you disagree with somebody’s opinion on a subject, you do not have the right to sling insults, raise your voice, or criticize them. I most certainly encourage disagreement on controversial topics and conversations are livelier if people do disagree on a subject. However, polite civil disagreement and outright hostility are two very different things. I will not tolerate hostility in the classroom, and anyone participating in this behavior will be escorted out of the room and not allowed to return for the rest of the class period.

Evolution: “Respect for data, comfort in faith.” Someone much wiser than me told me this a long time ago, and it has stayed with me since. If you can live by this wisdom then you’ll be fine in this class. Evolution and natural selection are central tenets of biology and will be critical aspects of this course, openly discussed and referred to frequently.

Math: Every biologist uses math and statistics. In this class you will use some math as it applies to biology. This mostly includes making and interpreting graphs, but will also include calculating averages and variation around an average, and interpreting and calculating simple statistical metrics such as chi-square tests, t-tests, etc. I will help you and there will be chances to practice.

iClickers: You will need to purchase/rent/reuse an iClicker remote device, available at the CSU Stan bookstore. Register it at www1.iclicker.com/register-clicker/. Expect to use it most days in class.

Assignments: You will submit four summaries of course content spanning several weeks of course material. See the document “Summary Rubric” on BlackBoard for tips on how to maximize points on summaries. I will endeavor to get graded summaries back to you by the next class meeting so you can use them to study for exams. Other assignments will come in the form of Mastering Biology, in-class concept reviews & discussion, and clicker questions. If you are absent from class you cannot make up clicker or concept review points.

Mastering Biology (MB): If you buy the textbook new from the CSU Stan bookstore it comes with access to the website Mastering Biology. Access MB through the MB website (www.masteringbiology.com) using the student code that comes with your text. If you get a used book from another source, you must purchase access to MB through the book publisher’s website. Either way, you must create an MB account as you will access it regularly throughout the semester. We will have a representative from the publisher in class to help you log in to MB and create an account. You will need the following

“instructor” code to add my specific MB course: **MBFLEMING75203**. I will track your access and use of MB, and points earned on the MB website will figure into your final grade.

Exams: There are three midterms and one final exam. Midterm exams cover a single unit; the final is comprehensive (~35% old material, ~65% new material since midterm #3). Exams will consist mainly of multiple choice and possibly some short answer questions. You will need a scantron form for all exams. Requests for early exams must be submitted *in writing* prior to the scheduled exam with evidence of your hardship. If you miss an exam and have to make it up, you will also need to provide some evidence of hardship. **No makeup exams will be given after graded exams are returned to the class.**

Cheating and Plagiarism: Don’t do it! Your work should reflect your own effort and words. Any verified instance of cheating and/or plagiarism will be unpleasant for all involved. At minimum, verified instances of cheating or plagiarism will result in the offending student receiving an automatic F in the course and being referred to the Dean of Students for further disciplinary action.

Special Accommodations and Recording Lectures: This course is ADA accessible. Students with documented disabilities should seek special accommodations for all classes through the Disability Resource Services office on campus (MSR 210). If DRS notifies me that you require ADA accommodations then you will receive them. Examples of ADA accommodations include extra time for exams, permission to record lectures, and note-taking assistance. If you record my class in any form (video, audio, still pictures, etc.) without accommodation from DRS, that constitutes intellectual property theft and will be unpleasant for all involved. NOTE: Student athletes who will miss class for games/matches should have their coach contact me, and I will accommodate your schedule by allowing alternate test dates and/or excusing points missed in class.

Grades: There are 1000 points possible in this course:

Activity/Assignment	Points Possible	% of Total Points
Midterm Exams (x3)	300	30%
Final Exam	150	15%
Summaries (x4)	40	4%
Concept Reviews (x14)	70	7%
Mastering Biology	100	10%
Clicker Questions	40	4%
Lab section	300	30%
TOTAL	1000	100%

I calculate grades as a function of grade point average (GPA) where A=4.0 and D=1.0 (I will show you an example in class). Students find this method fair and equitable. **I give + and – grades** as follows:

4.0-3.8 = A	3.7-3.6 = A-	3.5-3.3 = B+	3.2-3.0 = B	2.9-2.6 = B-	2.5-2.3 = C+
2.2-2.0 = C	1.9-1.6 = C-	1.5-1.3 = D+	1.2-1.0 = D	0.9-below = F	
	CR = 1.6 or higher		NC = 1.5 or lower		

Important Dates: The last day to add the class is Sept. 6th; Census Date is Sept. 21st. Census Date is the last day to drop the course or change your grading option without my signature; it is your responsibility to submit the grade change form to Admissions and Records by 5pm that day. Nov. 5th is the last day to change your grading option with my signature. I strictly adhere to the grading option Academic Records

has on file for you when I submit final grades. **I will not change grades once final grades have been submitted.**

Getting Help & Study Skills: The following suggestions may help you succeed in this and other classes. 1) **Read the assigned pages** before class and bring your questions to class. 2) **Attend class** and participate actively. 3) **Complete all assignments** and turn them in on time. 4) **Take notes** in a way that is helpful to you, even if you have to use a lot of paper. 5) **Join a study group!** Students who study in groups tend to do better than those that study alone. 6) **Study** for the exams well before the morning of the exam. 7) **Go to bed early** the night before and get up early the day of exams. 8) **Learn how you learn** and then stick with a style or process that is successful for you.

Deep learning takes time and is impossible to do in a single session before an exam. **Form a study group that meets regularly** so you can talk about new concepts and review terminology. When studying for exams, focus primarily on lecture notes, Mastering Biology, and the assigned text readings.

There is help on campus for students struggling with biology!

1. There is unofficial **supplemental instruction** for this course. **Katie Alosi** (kalosi@csustan.edu) has volunteered to be the SI leader for this course. She knows my teaching style because has taken classes with me and has served as SIL leader for another class I teach four times. She is an excellent facilitator of learning and I trust her unreservedly.
2. The **Central Valley Math & Science Alliance**, located in 124 Naraghi Hall, is a free walk-in science and math tutoring center. With both student and faculty tutors available from 9am – 5pm daily, there should be someone available to answer your questions.
3. The **Biology Club** is a group of students who have gone through general biology courses and they are willing to offer advice and help, especially if you buy them coffee or bring them cookies.
4. **Tutoring Services** on the ground floor of the CSU Stan Library (L-112) has drop-in tutoring for biology; check their office or website for their schedule.
5. The **Advising Resource Center** (MSR 180).
6. **Student Support Services** (MSR 230).
7. **Program for Academic and Career Excellence (P.A.C.E.)** in MSR 245

Of course, I will work hard to help you in class and out. Come to office hours, communicate with me and let me know your frustrations and I will respond.

Tentative Lecture Schedule:

WEEK	DATE	TOPIC(S)	Read/Due:
1	Aug. 25	Intros, nature of science, major themes of biology	Ch. 1, Ch. 22.2, watch "Learning how to Learn in Biology" video online!
	Aug. 27	Chemistry for biologists	Ch. 2
2	Sept. 1	Water	Ch. 3
	Sept. 3	Water	Ch. 3
3	Sept. 8	Carbon	Ch. 4
	Sept. 10	Four classes of macromolecules	Ch. 5
4	Sept. 15	Membrane Structure	Ch. 7; Summary #1 due
	Sept. 17	Membrane Function	Ch. 6.2, 6.4
5	Sept. 22	MIDTERM EXAM #1	Just food stuff
	Sept. 24	The rest of the cell	Ch. 6.1, 6.3, 6.5-6.7

6	Sept. 29	Metabolism, energy, enzymes	Ch. 8
	Oct. 1	Photosynthesis	Ch. 10
7	Oct. 6	Cell respiration, fermentation	Ch. 9
	Oct. 8	Cell communication	Ch. 11; Summary #2 due
8	Oct. 13	<i>Non-instructional day, no class</i>	<i>Have fun!</i>
	Oct. 15	Mitosis	Ch. 12
9	Oct. 20	MIDTERM EXAM #2	More food stuff
	Oct. 22	Meiosis and sex	Ch. 13
10	Oct. 27	Basic (Mendelian) genetics	Ch. 14
	Oct. 29	Biological basis of monsters	Special topic not in text
11	Nov. 3	Chromosomal basis of inheritance, complex genetics	Ch. 15
	Nov. 5	DNA structure, function and replication	Ch. 16
12	Nov. 10	Gene expression	Ch. 17; Summary #3 due
	Nov. 12	Gene regulation	Ch. 18
13	Nov. 17	MIDTERM EXAM #3	Just sex stuff (& maybe monsters)
	Nov. 19	Genome evolution	Ch. 21
14	Nov. 24	Viruses	Ch. 19
	Nov. 26	<i>Happy Thanksgiving!</i>	<i>Don't eat too much</i>
15	Dec. 1	Biotechnology	Ch. 20
	Dec. 3	Selection, both artificial and natural	Ch. 22.1 – 22.2
16	Dec. 8	Population genetics	Ch. 23
	Dec. 10	Biogenesis hypothesis and radiometric dating	Ch. 25.1 – 25.3; Summary #4 due
17	Dec. 15	<i>No class, finals week</i>	<i>Do good on your other final exams!</i>
	Dec. 17	Cumulative FINAL EXAM 8:30-10:30am	Food, sex and controversy

