

BIOL 1010-004 “Principles of Biology”

CSU Stanislaus

Course Syllabus**Instructor:** Dr. Michael Fleming**Office:** 261 Naraghi Hall**Phone:** (209) 664-6923**Email:** mfleming1@csustan.edu**Office Hours:** Wednesdays 11am-12pm, Thursdays 2:30-3:30pm, or by appointment.**Lectures:** Tuesdays & Thursdays 12:30-1:45, 167 Demergasso-Bava Hall (a.k.a P-167)

Course Description: This course satisfies the B2 (biological science) lower division general education requirement. We will explore basic biological phenomena as they relate to all living organisms, specifically (1) molecules and cells, (2) genetics, (3) evolution and (4) ecology. We do not cover physiology in this course; that area of biology is more appropriate for pre-med or pre-health students. Nor are we going as deep into topics we will cover as the biology majors do. That said, we will cover a lot of material! We will meet face-to-face twice a week, and you will access an online platform called Mastering Biology several times weekly 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. **This course is rather fast paced and language intensive.** If you are currently in or still need to take a remedial English course (ENGL 1000, ENGL 1001, ENGL 1006), please consider taking BIOL 1010 another time.

Lab: There is no laboratory requirement for this course, but I highly recommend that you take BIOL 1020 this semester if at all possible! 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 BIOL 1010 do better if they take BIOL 1020 in the same semester.

Text: *Campbell Essential Biology CSUS Custom Edition* (a.k.a. *Campbell Essential Biology, 5th ed.*) by Simon, Reese and Dickey. The one you get at CSUS bookstore says “Custom Edition” and has a mostly red cover, but you can also find the “regular” version easily online (that version has a large green praying mantis on it).

Announcements: Check BlackBoard for updates, lecture slides, study guides, etc.

Course Objectives: After completing this course 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.

My Teaching Philosophy: 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.

Class Participation: Please arrive to class on time and ready to learn. 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/iPods/etc. should be turned off during class. Be honest, hold yourself accountable for your actions, and hold me accountable for mine.

Evolution: “Respect for data, comfort in faith.” Someone much wiser than me came up with this saying. If you can live by it 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 course you will use some math as it applies to biology. This mostly includes making and interpreting graphs, but may also include calculating averages and variation around an average. I will help you and there will be chances to practice. NOTE: a calculator is good for this class.

iClickers: You will need to purchase/reuse/rent an iClicker remote. Register it at www1.iclicker.com/register-an-iclicker. Expect to use it most days in class.

Assignments: Most Tuesdays you will submit a summary of course content from the previous week. See the document “Summary Rubric” on BlackBoard for more information on summaries. Other assignments will come in the form of Mastering Biology before and after each class, in-class concept reviews & discussion, and clicker questions. If you are absent from class you cannot make up the clicker or concept review points.

Mastering Biology: If you buy the textbook new from the CSU Stan bookstore, you also then have access to the website Mastering Biology (www.masteringbiology.com). If you buy the book used or get it from a friend, you will have to purchase an account on the Mastering Biology website. Either way, you must create a Mastering Biology (MB) account as you will access it regularly before and after each class. Check Blackboard for a useful file on how to log in to MB and create an account. You will need the following instructor code to add my specific MB course: MBFLEMING04076. 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. The final will be comprehensive (about 30% old material, 70% new material since the last midterm). Exams will consist of multiple choice and 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.

Recording Lectures and Special Accommodations: This course is ADA accessible. Students with documented disabilities should seek special accommodations for all classes through the Disability Resource Services office on campus. If DRS notifies me that you require ADA accommodations, then I will provide them for you, such as permission to record lectures. Otherwise, you have to do it the old-fashioned way with pen and paper. 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 a bad situation for all involved. 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 700 points possible in this course:

MIDTERM EXAMS (x3)	= 300 pts.
FINAL EXAM	= 150 pts.
WEEKLY SUMMARIES (x11)	= 55 pts.
CONCEPT REVIEWS (x11)	= 55 pts.
MASTERING BIOLOGY	= 100 pts.
<u>CLICKER QUESTIONS</u>	= 40 pts.
TOTAL	= 700 pts.

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 of this 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 Feb. 7th. Census Date is Feb. 21st. This 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. Mar. 20th 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 chapter 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.

Learning takes time and is difficult (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! I am told there will supplemental instruction with a former 1010 student for this course. At the time of writing this syllabus I don't have details, but will update you in the first days of class. 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 8am – 6pm daily, there should be someone available to answer your questions. 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. Tutoring Services on the ground floor of the CSUS Library (L-112) has drop-in tutoring for biology; check their office or website for their schedule. The Advising Resource Center, Student Support Services and the Program for Academic and Career Excellence (P.A.C.E.) in the MSR Building may be useful sources of aid

for you. 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	Tuesday, Jan. 28	Intro, course structure/expectations, data	
	Thursday, Jan. 30	Biology today, Thinking like a biologist	Ch. 1, skim Ch.20
2	Feb. 4	Basic chemistry, water	Ch. 2, Summary #1 due
	Feb. 6	Organic chemistry, biological molecules	Ch. 3
3	Feb. 11	Cells & membranes	Ch. 4, Summary #2 due
	Feb. 13	Energy concepts, ATP and biological work	Ch. 5
4	Feb. 18	Enzymes, membrane transport	Ch. 5, Summary #3 due
	Feb. 20	Photosynthesis	Ch. 7
5	Feb. 25	Respiration basics	Ch. 6, Summary #4 due
	Feb. 27	MIDTERM #1 (Cells & Biochemistry)	
6	Mar. 4	Mitosis (asexual reproduction)	Ch. 8
	Mar. 6	Meiosis (sexual reproduction)	Ch. 8
7	Mar. 11	Patterns of inheritance	Ch. 9, Summary #5 due
	Mar. 13	Inheritance, DNA structure & function, mutation	Ch. 9, 10
8	Mar. 18	Viruses, gene control, cloning	Ch. 10, 11, Summary #6 due
	Mar. 20	Cancer, DNA technology, profiling, forensics	Ch. 11, 12
9	Mar. 25	MIDTERM #2 (Genetics)	
	Mar. 27	Evidence for evolution, Darwin	Ch. 13
10	Apr. 1	Microevolution, sexual selection, species concept	Ch. 13, 14, Summary #7 due
	Apr. 3	Species concept, extinction, classification	Ch. 14,
11	Apr. 8	Origins of early life	Ch. 15, Summary #8 due
	Apr. 10	Plants, fungi, lower animals	Ch. 16, 17
12	Apr. 15	Higher animals, human evolution	Ch. 17, Summary #9 due
	Apr. 17	Midterm #3 (Evolution)	
13	Apr. 22	<i>Spring Break ☺</i>	<i>Hope you are</i>
	Apr. 24	<i>Spring Break ☺</i>	<i>doing something fun!</i>
14	Apr. 29	Animal behavior	<i>Special topic not in text</i>
	May 1	Diverse environments, human impacts	Ch. 18
15	May 6	Good news for a change!	Ch. 18, 20, Summary #10 due
	May 8	Populations, growth models	Ch. 19,
16	May 13	Applied population ecology, human populations, biodiversity	Ch. 19, 20, Summary #11 due
	May 15	Communities, conservation, biophilia	Ch. 20
17	May 20	<i>No class, take your other finals</i>	
	May 22	FINAL EXAM 11:15am – 1:15pm (Ecology and old material)	