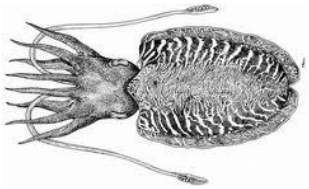


BIOL 1010-003 "Principles of Biology"
CSU Stanislaus
Course Syllabus

Instructor: Dr. Michael Fleming **Office:** 269 Naraghi Hall
Phone: (209) 664-6923 **Email:** mfleming1@csustan.edu
Office Hours: Mondays 2-3, Wednesdays 12-1, Thursdays 2-3, or by appointment.

Lectures: Tuesdays & Thursdays 11-12:15, 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 ENGL 1000, ENGL 1001 or ENGL 1006 please consider taking BIOL 1010 another time.

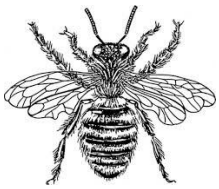
Lab: There is no laboratory requirement for this course, but I highly recommend that you take BIOL 1020 this semester if possible! I am a firm believer in reinforcing concepts learned in lecture with activities in lab that illustrate these concepts. Data support the hypothesis that students in BIOL 1010 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 Goals: As this course is a General Education course, the overarching goals of the course are to

1. *Develop the skills and competencies necessary to effectively participate in our society and the world* (this includes demonstrating effective oral and written communication, thinking logically, creatively and critically, applying quantitative reason and skills to solve problems, and use technology effectively to gather and communicate information).
2. *Develop an understanding of the contribution to human knowledge and culture of the biological sciences* (this includes applying the scientific method, demonstrate understanding of living and non-living aspects of the world you live in, of human cultural and scientific endeavors, the structures and institutions that frame human interactions).



More specific to this class, after completing it 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: 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 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. There is plenty of research that shows 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/iPods/etc. should be turned off 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 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/rent/reuse an iClicker remote. Register it at www1.iclicker.com/register-clicker/. 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 tips on how to maximize points on summaries. 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 the clicker or concept review points.

Mastering Biology: If you buy the textbook new from the CSU Stan bookstore, it comes with access to the website Mastering Biology (www.masteringbiology.com). If you buy the book used or get it another way, 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 throughout the semester. Check Blackboard for a useful file on how to log in to MB and create an account. You will need the following code to add my specific MB course: **MBFLEMING99770**. 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 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.

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. 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:

Activity/Assignment	Points	% of Total Points
Midterm Exams (x3)	300	43%
Final Exam	150	21%
Summaries (x11)	55	8%
Concept Reviews (x11)	55	8%
Mastering Biology	100	14%
Clicker Questions	40	6%
TOTAL	**700**	**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 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 Aug. 27th. Census Date is Sept. 18th. 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. Oct. 23rd 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!
1. There is **supplemental instruction** for this course.
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 8am – 6pm 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 CSUS Library (L-112) has drop-in tutoring for biology; check their office or website for their schedule.
5. The **Advising Resource Center**
6. **Student Support Services**
7. **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	Aug. 19		
	Aug. 21	Course logistics, process of science (coffee & Parkinson's disease)	Pg. 3, 14-18
2	Aug. 26	Defining life, chemical building blocks, water (evidence from space)	Pg. 4-8, Ch.2, 38-39 **Summary #1 due**
	Aug. 28	Cellular basis of life, membranes and transport (wonder drug)	Pg. 55-61, 71, 83-87
3	Sept. 2	Metabolism, nutrition and enzymes (power foods)	Pg. 40-48, 51, 76-82 **Summary #2 due**
	Sept. 4	Energy flow and photosynthesis (mighty microbes)	Pg. 92-93, 437-439, 107-111, box on 115-116
4	Sept. 9	Energy and respiration (supersize me)	Pg. 91-95, 100-103 **Summary #3 due**
	Sept. 11	Extra day, either review or lecture after some lectures go long	

5	Sept. 16	**MIDTERM #1 (Cells & Biochemistry)**	
	Sept. 18	DNA structure & function (DNA will set you free)	Pg. 49-50, 174-176, 188-194, 226-229
6	Sept. 23	Genes to proteins (transgenic organisms)	Pg. 178-179, 185, 220-225, 235-236, **Summary #4 due**
	Sept. 25	Cell division & mitosis (paramedic plants)	Pg. 121-128, 137
7	Sept. 30	Genetic mutations & cancer (fighting fate)	Pg. 257-258, 231, 186-187, 199, 128-129, 211-215 **Summary #5 due**
	Oct. 2	Single gene inheritance & meiosis (Hellen)	Pg. 130-140, 145-149, 152-157
8	Oct. 7	Complex inheritance (sex and depression)	Pg. 150-151, 158-167 **Summary #6 due**
	Oct. 9	Stem cells & cell differentiation (grow your own)	Pg. 200, 207-210, 234
9	Oct. 14	**MIDTERM #2 (Genetics)**	
	Oct. 16	Darwin's big idea & how populations evolve (bugs that resist bugs)	Pg. 10-13, 243-247, 252-255
10	Oct. 21	Darwin meets genetics, species (evolution in the fast lane)	Pg. 256-258, 259-265, 270-271, 274-277 **Summary #7 due**
	Oct. 23	Evidence for evolution (fish with fingers)	Pg. 248-251, 278-285
11	Oct. 28	Evolution of biological diversity (history, classification, phylogeny)	Pg. 269, 272-273, 285-289 **Summary #8 due**
	Oct. 30	Origins of monster myths (scary!)	*Special topic not in text*
12	Nov. 4	Origin of life, chemical evolution (the biogenesis paradox)	Pg. 293-298, 311
	Nov. 6	Human evolution (redefining race)	Pg. 337-338, 354-355, 360-367, **Summary #9 due**
13	Nov. 11	*Veteran's Day!*	*honor a veteran*
	Nov. 13	**Midterm #3 (Evolution)**	
14	Nov. 18	Animal behavior (the beast in you)	*Special topic not in text*
	Nov. 20	Population Biology (on the tracks of moose and wolves)	Pg. 374, 376-379, 403-405, 406-414
15	Nov. 25	Community ecology (what's happening to the honeybees?)	Pg. 425-427, 428-433, 435-440, **Summary #10 due**
	Nov. 27	*Happy Thanksgiving!*	*eat well*
16	Dec. 2	Human impacts (the heat is on)	Pg. 373, 392-399, 417-421, 427-428, 443
	Dec. 4	Sustainability (eco-metropolis)	Pg. 414-416, 439, 444-449 **Summary #11 due**
17	Dec. 9	Good news for a change (an army of one)	*Special topic not in text*
	Dec. 11	**FINAL EXAM 11:15am – 1:15pm (Ecology and old material)**