

**BIOL 1010-005 "Principles of Biology"
CSU Stanislaus
Course Syllabus**

Instructor: Dr. Michael Fleming

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Office Hours: Tuesdays 11-12, Wednesdays 2-3, Thursdays 10-11, or by appointment.

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Lectures: Tuesdays & Thursdays 8-9:15, 102 Bizzini Hall (a.k.a C 102)

Course Description: This course satisfies the B2 (life science) lower division general education requirement. This is a survey course; we will explore many basic biological concepts as they relate to living organisms under the broad categories of (1) molecules and cells, (2) genetics, (3) evolution and (4) ecology. We do not cover physiology in this course; this would be more appropriate for pre-med or pre-health students. We do not go as deep into biology as the biology majors do, but we will cover a lot of material! Classes meet face-to-face twice a week, and you will access an online platform called Mastering Biology frequently 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 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).

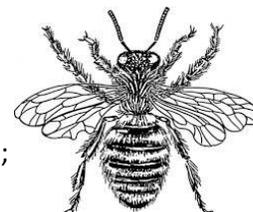
Announcements: Check BlackBoard often for updates, lecture slides, study guides, etc.

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 using 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, demonstrating understanding of living and non-living aspects of the world you live in, of human cultural and scientific endeavors, and 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 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. 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/music devices/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 told me this a long time ago, and it stayed with me. 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 device, available at the CSU Stan bookstore. 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. On midterm weeks you may pick up graded summaries during my Wednesday office hour. 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 get a used book from another source, you will have to purchase access to Mastering Biology through their 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: MBFLEMING78336. 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. 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 715 points possible in this course:

Activity/Assignment	Points	% of Total Points
Midterm Exams (x3)	300	42%
Final Exam	150	21%
Summaries (x11)	55	8%
Concept Reviews (x14)	70	10%
Mastering Biology	100	14%
Clicker Questions	40	5%
TOTAL	715	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 Feb. 4th. Census Date is Feb. 23rd. 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. Apr. 16th 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.

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. **Katie Alosi** (kalosi@csustan.edu) and **Rebekah Dial** (rebekahdial@gmail.com) are the SI leaders for this course. They know my teaching style because they were once in your shoes. They are both excellent facilitators of learning and I trust them 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	Jan. 27	Course logistics, process of science (coffee & Parkinson's disease)	Pg. 3, 14-18
	Jan. 29	Defining life, chemical building blocks, water (evidence from space)	Pg. 4-8, Ch.2, 38-39
2	Feb. 3	Cellular basis of life, membranes and transport (wonder drug)	Pg. 55-61, 71, 83-87 Summary #1 due
	Feb. 5	Metabolism, nutrition and enzymes (power foods)	Pg. 40-48, 51, 76-82
3	Feb. 10	Energy flow and photosynthesis (mighty microbes)	Pg. 92-93, 437-439, 107-111, box on 115-116 Summary #2 due
	Feb. 12	Energy and respiration (supersize me)	Pg. 91-95, 100-103

4	Feb. 17	Extra day, either review or lecture after some lectures go long	Summary #3 due
	Feb. 19	MIDTERM #1 (Cells & Biochemistry)	
5	Feb. 24	DNA structure & function (DNA will set you free)	Pg. 49-50, 174-176, 188-194, 226-229
	Feb. 26	Genes to proteins (transgenic organisms)	Pg. 178-179, 185, 220-225, 235-236
6	Mar. 3	Cell division & mitosis (paramedic plants)	Pg. 121-128, 137 Summary #4 due
	Mar. 5	Genetic mutations & cancer (fighting fate)	Pg. 257-258, 231, 186-187, 199, 128-129, 211-215
7	Mar. 10	Single gene inheritance & meiosis (Hellen)	Pg. 130-140, 145-149, 152-157, Summary #5 due
	Mar. 12	Complex inheritance (sex and depression)	Pg. 150-151, 158-167
8	Mar. 17	Stem cells & cell differentiation (grow your own)	Pg. 200, 207-210, 234 Summary #6 due
	Mar. 19	MIDTERM #2 (Genetics)	
9	Mar. 24	Darwin's big idea & how populations evolve (bugs that resist bugs)	Pg. 10-13, 243-247, 252-255
	Mar. 26	Darwin meets genetics, species (evolution in the fast lane)	Pg. 256-258, 259-265, 270-271, 274-277
10	Mar. 31	<i>No class, Cesar Chavez Day</i>	<i>Woohoo!</i>
	Apr. 2	Evidence for evolution (fish with fingers)	Pg. 248-251, 278-285 Summary #7 due
11	Apr. 7	<i>No class, Spring Break</i>	<i>Woohoo!</i>
	Apr. 9	<i>No class, Spring Break</i>	<i>Woohoo!</i>
12	Apr. 14	Evolution of biological diversity (history, classification, phylogeny)	Pg. 269, 272-273, 285-289
	Apr. 16	Origin of life, chemical evolution (the biogenesis paradox)	Pg. 293-298, 311 Summary #8 due
13	Apr. 21	Human evolution (redefining race)	Pg. 337-338, 354-355, 360-367
	Apr. 23	Midterm #3 (Evolution)	
14	Apr. 28	Animal behavior (the beast in you)	<i>Special topic not in text</i>
	Apr. 30	Population Biology (on the tracks of moose and wolves)	Pg. 374, 376-379, 403-405, 406-414, Summary #9 due
15	May 5	Community ecology (what's happening to the honeybees?)	Pg. 425-427, 428-433, 435-440,
	May 7	Human impacts (the heat is on)	Pg. 373, 392-399, 417-421, 427-428, 443 Summary #10 due
16	May 12	Sustainability (eco-metropolis)	Pg. 414-416, 439, 444-449
	May 14	Good news for a change (an army of one)	<i>Special topic not in text</i> Summary #11 due
17	May 19	FINAL EXAM 8:30am – 10:30am (Ecology and old material)	
	May 21		

