

**BIOL 1150-001 "General Biology 2"  
CSU Stanislaus  
Course Syllabus**

**Instructor:** Dr. Michael Fleming

**Phone:** (209) 664-6923

**Office Hours:** Tuesdays 2:00-3:30pm, Fridays 1:00-2:30pm, or by appointment.

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**Class Sessions:** Tue/Thur, 12:30-1:45pm, Bizzini 204

**Pre-requisite:** Pass BIOL 1050 with a C- or better, or high school biology with a B or better. Students who do not meet this pre-requisite will be dropped from the course, no exceptions. Also, if you are a transfer student from a local community college, you must take the entire general biology sequence either on this campus or at your CC and transfer both classes here. If you are hoping to "split" the sequence between CC and us, it won't work (complicated articulation rules that University has set).

**Course Description:** As with BIOL 1050, the purpose of 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 second in the two-course majors' intro biology series, and emphasizes evolution, organismal biology including diversity of life, and ecology. 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 upper division biology courses.**

This is a survey course that covers a lot of material at a rapid pace. 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 utilizes basic algebra, calculus and statistics. It is critical that you spend considerable time outside of class actively studying to be successful in the course!**

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

Section	Day and Time	Lab Instructor
BIOL 1150-002	Tues. 9:30am – 12:15pm	Dr. Patrick Kelly
BIOL 1150-003	Thur. 9:30am – 12:15pm	Ms. Christine Parisek
BIOL 1150-004	Thur. 6:00 – 8:50pm	Dr. Laurissa Hamilton

All lab sections meet in Naraghi 206. 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 1150 grade; you will receive only one grade for BIOL 1150 despite being enrolled in two separate sections.

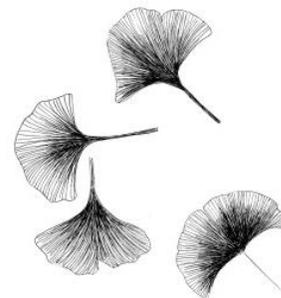
I am a firm believer in reinforcing concepts learned in lecture with activities in lab that illustrate these concepts. Data support the hypothesis that students in science lecture courses do better if they take the relevant lab in the same semester. Since lab topics are fixed due to materials and specimens required for each lab meeting, I will endeavor to reinforce, assess, and keep pace with concepts and skills you learn in lab; this means the lecture schedule is flexible and I may "call audibles at the line" to keep pace with or further reinforce lab topics.

**Text:** *Campbell Biology in Focus, 2<sup>nd</sup> edition* by Urry et al. The one you get at CSU Stan bookstore is a loose-leaf version (\$72 used/rental - \$120 buy/new). Of course you can also find the text easily online, maybe for more money, maybe less. The new text from our bookstore comes with an access code for a website called Mastering Biology (MB); you can use MB for extra practice and studying if you want, but I won't require it of you. However, 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. One cool feature of your text is that each chapter has a QR code you can scan with your smartphone. This will take you to a helpful website that gives you lots of vocabulary and quiz practice. No need to make your own flashcards (unless you want to).

**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:

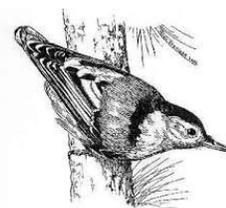
1. *All living things arise from a common ancestor.*
2. *Species evolve over time and how new species arise.*
3. *Phylogenies/Cladograms can be used to show relatedness of species and the evolution of new species from ancestral ones over time.*
4. *Individuals transmit genetic information to offspring, and how some alleles confer higher fitness than others in a particular environment.*
5. *Genotypes influence ranges of phenotypes in individuals, and how actual phenotypes result from interactions between alleles and the environment.*
6. *Natural selection leads to the evolution of structures that tend to increase fitness within the context of evolutionary, developmental, and environmental constraints.*
7. *Energy and matter flow between organisms and the abiotic environment.*
8. *At each trophic level in an ecosystem there is less energy available than the preceding level.*
9. *The size and structure of populations is dynamic.*
10. *Within ecosystems, interactions between individuals form networks, and how changes in one node of a network can cause changes in other nodes, directly or indirectly.*
11. *Biodiversity impacts many aspects of ecosystems.*

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 appeal to multiple learning preferences 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 and attention. 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 significantly 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 and technology not conducive to learning in the course 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 in any form, 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 myself told this to me a long time ago. 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, including algebra, statistics and/or calculus. 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, interpreting and calculating simple statistical metrics such as chi-square tests, t-tests, etc., and some calculus as it relates to population growth/decline. I will help you and there will be chances to practice in class.

**iClickers:** You will need to purchase/rent/reuse an iClicker remote device, available at the CSU Stan bookstore (\$30 - \$47). Register it at [www1.iclicker.com/register-clicker/](http://www1.iclicker.com/register-clicker/). Expect to use it most days in class.

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

**Preview/Review Questions:** The Preview/Review questions for each chapter (or the parts of chapters we cover) help you to prepare for each day's class session and later to test your knowledge of terms, understanding of concepts, and mastery of the material. Please use these questions to help yourself to be ready for class each day; after we complete each chapter, use the questions to test your knowledge. The Preview/Review questions will also be your homework for the course. There are four due dates in total. You will submit typed answers to the questions through a Google form. The link will be available in Blackboard and via email. I recommend typing answers to the questions as we complete each chapter. That way, you can check your work and submit prior to each due date. Together, P/R Q sets will be worth a total of 100 points over the course of the semester. My hope is that working your way through the Preview/Review questions will allow you to earn points while interacting with the material to really master the topics we will cover this semester.

**Exams:** There are three midterms and one final exam. 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:** Please 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	200	20%
Final Exam	200	20%
Summaries (x3)	100	10%
Concept Reviews (x10)	50	5%
Prev/Rev Qs (x3)	100	10%
Clicker Questions	50	5%
Lab section	300	30%
<b>TOTAL</b>	<b>1000</b>	<b>100%</b>

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 or drop the class is Sept. 20<sup>th</sup>. This is also the last day to change your grading option; it is your responsibility to submit the grade change form to Admissions and Records by 5pm that day. I strictly adhere to the grading option Academic Records has on file for you when I submit final grades. **Unless it is to replace an incomplete or to correct a mistake in my grading, I will not change grades once final grades have been submitted.**

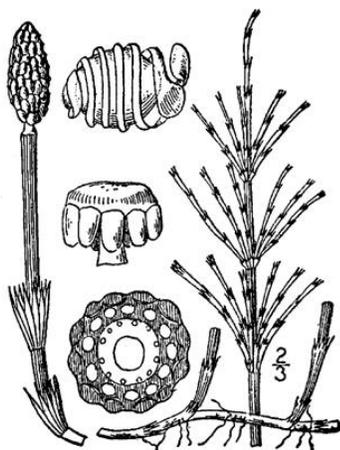
**Getting Help & Study Skills:** The following suggestions may help you succeed in this and other classes. 1) **Read the assigned pages** before class and bring your questions to class. 2) **Attend class** and participate actively. 3) **Complete all assignments** and turn them in on time. 4) **Take notes** 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, study guides, and the assigned text readings.

There is help on campus for students struggling with biology!

1. The **Commons**, located in 124 Naraghi Hall, is a free walk-in science and math tutoring center.
2. The **Louis Stokes Alliance for Minority Participation (LSAMP)** in the sciences offers support in science and math for students who face or have faced social, educational or economic barriers to pursuing careers in science and math fields. Visit their website or office (Naraghi 376) for more information.
3. **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.
4. The **Academic Success Center** (MSR 180).
5. **Student Support Services** (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:	Lab this week
1	Aug. 24	Class intro Evidence for evolution – <i>how do we know what we know about evolution?</i>	Ch. 19	No lab
2	Aug. 29	Evidence for evolution, phylogeny – <i>how do we know what we know about evolution?</i>	Ch. 19, 20	Deep time
	Aug. 31	Phylogeny – <i>What can this branching diagram tell us about how organisms are related?</i>	Ch. 20	
3	Sept. 5	Origin of species– <i>where does life come from?</i>	Ch. 22	Evolution & Classification
	Sept. 7	Broad patterns of evolution - <i>where does life come from?</i>	Ch. 23	
4	Sept. 12	Biogenesis – <i>how did the first cell arise?</i>	Ch. 24.1	Bacteria
	Sept. 14	Prokaryotes (bacteria and archaea) – <i>will bacteria outlast humans?</i>	Ch. 24.2-24.5	
5	Sept. 19	Protists – <i>these are eukaryotes?</i>	Ch. 25 <b>Due: Summary #1 and P/R Qs #1</b>	Protists
	Sept. 21	Flex day, review		
6	Sept. 26	<b>Midterm #1</b>	<b>Be prepared!</b>	Seedless plants
	Sept. 28	Plants 1 (mosses, ferns) – <i>ugh plants, who cares?</i>	Ch. 26, bits from Chs. 28-31	
7	Oct. 3	Plants 2 (gymnosperms, angiosperms) – <i>we're still talking about plants? Why?</i>	Ch. 26, bits from Chs. 28-31	Seeded plants
	Oct. 5	Plants 2 (gymnosperms, angiosperms) – <i>we're still talking about plants? Why?</i>	Ch. 26, bits from Chs. 28-31	
8	Oct. 10	Bioskills #1 – the significance concept, t-test, ANOVA		Lab exam #1
	Oct. 12	Bioskills #2 – correlation and regression		
9	Oct. 17	Fungi, Inverts 1 – <i>got athlete's foot?</i>	Ch. 26.2	Fungi, Tissues & Invertebrates
	Oct. 19	Inverts 1 – <i>got worms?</i>	Ch. 27, bits from Chs. 32-39	
10	Oct. 24	Inverts 2 – <i>what are the things that creepeth and slithereth and swimmeth?</i>	Ch. 27, bits from Chs. 32-39	More Inverts & Insect Study
	Oct. 26	Chordate diversity – <i>we're related to those?</i>	Ch. 27, bits from Chs. 32-39	
11	Oct. 31	The biological basis of monsters	Happy Halloween!	Insect Study & Ecology Project
	Nov. 2	Human evolution – <i>so, we're not descended from monkeys?</i>	Ch. 27, bits from Chs. 32-39 <b>Due: Summary #2 and P/R Qs #2</b>	
12	Nov. 7	Flex day, review		Deuterostomes
	Nov. 9	<b>Midterm #2</b>	<b>Be prepared!</b>	
13	Nov. 14	Population ecology, – <i>is that population growing? In decline? Why does it matter?</i>	Ch. 40	Work on lab projects
	Nov. 16	Population ecology, bioskill #3 (population modeling) – <i>is that population growing? In decline? Why does it matter?</i>	Ch. 40	
14	Nov. 21	Community Ecology – <i>who wins and who loses?</i>	Ch. 41	No labs!
	Nov. 23	No class – Thanksgiving Day	<i>Eat and be thankful</i>	
15	Nov. 28	Chemical cycling – <i>why are food chains so short?</i>	Ch. 42-1-42.4	Mammal Dentition & Frog Dissection
	Nov. 30	Human impacts – <i>what have we done?</i>	Ch. 43	

16	Dec. 5	Human impacts – <i>what have we done?</i>	Ch. 43	Lab Exam #2
	Dec. 7	Helping the Earth – <i>what can we do?</i>	Ch. 42.5, 43 <b>Due: Summary #3 and P/R Qs #3</b>	
17	Dec. 12	No class – Reading Day		No labs!
	Dec. 14	No class – Finals week		
18	Dec. 19	<b>FINAL EXAM 11:15am – 1:15pm</b>	<b>Be prepared!</b>	No Labs!