Biology 10: Introduction to Principles of Biology

Course Syllabus for sections 5703 & 5889 Fall 2020

Welcome to my Biology 10 course. I'm excited to meet you and to guide you into the fascinating world of biology. I believe that you have the ability to succeed in this course and to meet your educational goals. I value your ideas and your life experiences, and I look forward to learning together this semester. Please don't ever hesitate to contact me with any concerns or questions.

Meeting Times:	Lecture meets twice per week: Mondays & Wednesdays, 9-10:30am in Lark Hall 2009 Lab meets once per week: Section 5703 meets on Mondays, 11am-2pm in Baker Hall 1869 Section 5889 meets on Wednesdays, 11am-2pm in Baker Hall 1869
Instructor:	Elizabeth Keddy Email: ekeddy@santarosa.edu (I prefer to be contacted through Canvas) Office Location: Baker Hall 1812 Student assistance hours: Mondays and Wednesdays 2:30pm to 3:30pm
Course Description:	This is an introductory course intended to introduce students to basic topics in biology including: scientific method, ecology and biodiversity, anatomy and physiology, chemistry of life, cell and molecular biology, genetics, and evolution.
Required Text:	**Campbell Essential Biology with Physiology 5th ed.** (4th ed. is acceptable, check with me about others), 2016, Simon, Dickey, Hogan & Reece. *You do not need to bring your textbook to lecture or lab.* **Santa Rosa Campus Biology 10 Laboratory Manual (ISBN: 9781724537997)** *You will need to bring your entire laboratory manual to each lab session.*
Student Learning Outcomes:	Upon successful completion of this course, students will be able to: 1. Explain the core concepts of biology (evolution and adaptation, structure and function, systems and biology, flow of information, flow of energy and matter) as they apply to appropriate topics of cell and molecular biology, organismal biology, genetics, evolution and ecology. 2. Integrate related core concepts. 3. Demonstrate skill in core competencies.
Course Objectives:	During this course, student will: 1. Discuss relationship and connections between the five core concepts. 2. Evaluate how evidence for evolution relates to the scientific process and be able to construct an argument to counter common evolution misconceptions. 3. Apply the core concept of evolution and adaptation to all course content, cell and molecular biology, genetics, organismal, and ecology.

4. Integrate microevolutionary mechanisms with macroevolution.
5. Correlate the structure and function of plant and animal organ systems, organs, tissues and cells.
6. Compare and contrast the cell structure and function of prokaryotic and eukaryotic cells and of plant and animal cells.
7. Integrate concepts of diffusion and osmosis with cell membrane structure and mechanisms of transport.
8. Explain the relationships between the structure of atoms, molecules, and biological polymers, and their significance to cells, physiology, genetics, and evolution.
9. Integrate knowledge of molecular genetics, inheritance, and cell division (mitosis and meiosis), and apply these to evolutionary biology.
10. Apply understanding of negative feedback loops at the cellular and physiological level.
11. Integrate concepts of molecular, cellular, physiological, and ecological energy flow and nutrient cycling.
12. Apply knowledge of ecological principles to current ecological problems.
13. Integrate different levels of the biological hierarchy and examine emergent properties.
14. Test ideas with evidence, applying the scientific process to biological investigation including data analysis and interpretation.
15. Evaluate evidence as part of a scientific community.
16. Apply laboratory techniques, including proper microscope use, to observe and experiment with biological phenomena.

Attendance:

Success in this course requires maintaining a regular schedule for the entirety of the course.

Lecture: Plan to arrive and be ready to learn at the start of each class period. If you arrive to a lecture session late, please find a seat that provides the least distraction to your classmates. Try not to cross between students and the teacher. Please do not disrupt the class by walking up to ask for handouts. Additionally, if you are late to class and there is an assignment due, your assignment is late as well. It is best to plan to get to class a few minutes early to situate yourself. **According to SRJC policy, any student who misses more than 10% of the scheduled meeting hours may be dropped from the course.**

Laboratory: Information for all labs is provided at the start of the lab period. A brief quiz will also be administered. Therefore, it is imperative that you arrive on time. If you are more than 15 minutes late to a laboratory session, you will be counted as absent for that day. If you arrive after the quiz has been taken, you will not be able to take the quiz. Additionally, the lab sessions are 3 hours long for you to take the time to learn the material while in lab. **Anyone who leaves the lab prior to our final class discussion or more than 1 hour from the scheduled end time of the laboratory (2pm) will be considered absent.** Please see me if you must leave lab early. Because this is a laboratory course, missing the laboratory sessions is not acceptable. **Accumulating more than 2 laboratory absences will result in your overall grade being lowered by 5 percentage points. For each laboratory meeting you miss after 3 absences, your grade will**

be lowered an additional 5 percentage points. For example, imagine a student who earns a 90% in the course, but missed 3 lab sessions. Their final grade percentage will be 85% and they will earn a letter grade of B rather than A.

Conduct:

All participants of this course are expected to be respectful of one another to foster a safe, healthy and distraction-free learning environment. It is unacceptable to engage in behavior that is disruptive or rude to the instructor, your peers, or any guests. I will not tolerate behavior that is offensive or makes other students uncomfortable. In my classroom, I strive to maintain an inviting atmosphere in which all students feel safe and their ideas and contributions are valued.

Behaviors which are considered unacceptable include, but are not limited to: talking out of turn, mocking or laughing at other students, challenging the rules of the course, harassment of instructor or peers, disrespectful or foul language, and academic dishonesty.

Additionally, to foster a distraction-free learning environment, **cell phones, computers and other electronic equipment are not permitted** without prior consent. Repeatedly breaking this rule will result in your dismissal from the lecture session.

If you do not conduct yourself appropriately, you will be asked to leave the class for the day, and may be suspended from an additional class period. Ongoing problems will be referred to the Vice President of Student Services for formal disciplinary action.

Laboratory safety will be explained during your first laboratory session**. Any student not following safety protocol will be asked to leave and may be suspended from returning to the laboratory for one lab period.**

Academic Dishonesty:

All forms of cheating, stealing and plagiarizing with the intent to defraud are prohibited and will be reported to the Conduct Dean. If you are caught cheating on an exam, you will be given a zero on that exam. **Cheating includes but is not limited to: looking at another student's answers, using cheat sheets, using your phone, or talking to another student while taking an exam**. If you are caught plagiarizing on an assignment, you will receive a zero on that assignment. **Plagiarizing includes copying from a website, a book, another student, or any other source without giving proper credit. Any students who submit identical work will both receive a zero on that assignment.**

Computer Use:

Your instructor will use Canvas throughout this course to communicate with you, post course materials, and administer weekly quizzes. **You are responsible for checking your account.** If you do not own a computer, there are computers on campus. I recommend scheduling time each week to use these computers. **All of the handouts will be listed on Canvas**. There is a note-aid for each lecture. If you want to use the note-aid while in class, you will need to print it

out and bring it to class with you. **Go to "Modules" to find them**. Additionally, study resources, answer keys, and your grades can be found on Canvas.

Evacuation Plan: In the event of an emergency during class that requires evacuation of the building, please leave the class immediately, but calmly. Our class will meet on the lawn between Lark Hall, Bech Hall, Shuhaw Hall, and Baker Hall, to make sure everyone got out of the building safely and to receive further instructions. If you are a student with a disability who may need assistance in an evacuation, please see me during my office hours as soon as possible so we can discuss an evacuation plan.

Grading:

3 Lecture Exams and a final exam:	**50% (12.5% each)**
Lab Exams:	**24% (8% each)**
Assignments:	**16%**
Weekly Quizzes:	**10%**

Final Grades will be assigned as a letter grade according to the following:
A = > 88.9% B = 79-88.9% C = 68-78.9% D = 55-67.9% F = < 55%

Exams: There are 3 exams that will be given during lecture times, and one final exam given during the designated final exam period. You will have the entire class period to complete each exam. You must turn in your exam at the end of the lecture time whether you've finished the exam or not.

NOTICE: If you are absent for an exam without making prior arrangements with the instructor, you will be given a ZERO for that exam. "Prior arrangements" means that you have notified the instructor at least one week in advance and you will take the exam early.

Special exceptions will be made for the following verifiable events:

-an illness with a signed doctor's note stating that you visited the doctor on the day of the exam, or that you visited the day before the exam, and the doctor indicated that you could not return to class until after the exam (this also includes visiting the doctor for a dependent)
-a death in the family (with documentation)

In these cases, please email me within a day of the exam to make arrangements to make up the exam.

The tests count for a large portion of your grade, so please mark your calendar with the following dates:

Exam #1 is scheduled for **February 10th** and will include information from lectures 1-5.
Exam #2 is scheduled for **March 11th** and will include information from lectures 6-10.
Exam #3 is scheduled for **April 20th** and will include information from lectures 11-15.

The **final exam** is scheduled for **May 20th** and it is comprehensive, with ½ of the test covering material tested on exams 1-3 and the other ½ of the test covering new material (lectures 16-21). You will need a scantron for this exam.

It is the policy of the Life Sciences Department to not return exams to students. Once graded, your exams will be filed and available for review during the semester. You may review them and take notes, but you may not copy the test in any way (including taking photos). Students may not take tests out of the classroom or the instructor's office. Anyone who breaks this rule will receive a zero on their exam. After each exam is graded, you have one week to hand in any rebuttals, in writing, concerning the grading of that exam. After that week, your grade will remain as given. Once final course grades are submitted, students have two months to request an appointment to review any exam from the previous semester. Exams (and any unreturned work) will be shredded two months after final grades have been posted.

Extra Credit: You will have the opportunity to complete one extra credit assignment per lecture exam. By thoroughly completing the assignment, you can earn up to 3 points added to your test score for exams 1-3, and up to 5 points added to your final exam score. The extra credit assignments must be submitted at the start of the lecture period in which they are due. Late submissions will not be accepted. The due dates are listed on the syllabus and the instructions are on Canvas and/or provided during the lecture session.

Lab Exams: Your understanding of the practical application of the biology topics will be assessed using 3 lab exams. These assessments will be given during the laboratory period. There will be 50 questions per lab exams. Four points of each exam will come from your **lab quizzes**, as described below. Therefore, lab exams will be out of 54 points.

Scoring a grade of 80% or higher on a quiz (8 out of 10 or higher) will earn you 2 points from that quiz. Scoring 60% to 79.9% (6 to 7.9 out of 10) will earn you 1 point from that quiz. No points will be earned from a score of less than 60% (less than 6 out of 10). There will be 3 quizzes per lab exam, for a possible 6 points. This means you have the opportunity to earn 2 points of extra credit per lab exam by doing well on the quizzes. **However, doing poorly on or missing the lab quizzes will cost you 4 points on your lab exam**. Anyone tardy or absent from lab will not be able to take the lab quiz.

The first lab exam is scheduled for **week 7** and will cover labs 1-4. Lab exam #2 is scheduled for **Week 13** and will cover labs 5-8. Exam #3 is scheduled for **Week 18** and will cover labs 9-12. **Because materials need to be set up in the lab for these assessments, make-ups cannot be given. Please see me immediately if you have a scheduling conflict.**

Assignments: There will be assignments to be submitted for credit, some during lecture and some for homework. Homework assignments are to be done individually. Some in-class assignments will be done as a group and submitted as a group.

Each member of the group will receive the same grade for that assignment. If you are absent for an assignment that was completed during the class period, you will not be able to complete the assignment for credit. However, you will be permitted to complete 1 *make-up* assignment that will be given near the end of the semester.
Your lowest assignment grade will be dropped.

Policy on late work:

All assignments are due at the start of class, at 9am. After this, your assignment is late and will only receive partial credit. I will not accept assignments more than 15 minutes late. If you are late to class, take out your assignment before entering the classroom and put your assignment in the **late box as you enter.** This box will be collected 15 minutes after the start of class. No assignments will be accepted after this. **You may only submit 1 assignment late. After this, you will not earn credit for late assignments.**

To avoid submitting an assignment late, be on time. If you are going to be late or absent when an assignment is due, email me your completed assignment by 9am, and then give me a hard copy of your assignment in class. You will not lose points if you do this.

Weekly Quizzes:

To check your understanding of the previous week's material, **you will take quizzes once a week on Canvas that will be due at 11:59pm every Sunday.** These quizzes are to be completed individually. The online quiz must be completed within 10 minutes (to discourage you from relying on your notes). Once you open the quiz, the time starts. You cannot close or pause the quiz and come back to it.
The quizzes will be based on the lectures completed the previous Monday and Wednesday. To help you study, vocabulary and question lists can be found on Canvas under the Module for the appropriate week. I teach with the assumption that you have learned the material by the next week. Therefore, the quizzes allow you to find out if you've learned the material and keep you from getting behind. This is to encourage you to study throughout the course, rather than waiting until there is an exam
There will be no make-ups of quizzes regardless of the reason.
Your 2 lowest quiz scores will be dropped prior to calculation of your final grade.

Additional Support:

Support services are available to you if you struggle in this course. Please contact me for extra help. If you need disability-related accommodations for this class, such as access to notes, test taking services, special furniture, etc., please provide the Authorization for Academic Accommodations (AAA letter) from the Disability Resources Department (DRD) to the instructor as soon as possible. You may speak with the instructor privately during office hours about your accommodations. Please contact DRD if you have not received authorization for accommodations. DRD is located in the Bertolini Student Center on the Santa Rosa campus, and Jacobs Hall on the Petaluma Campus.

Following is the tentative schedule for the course. I will notify the class of any changes and it is your responsibility to keep track of those changes. **Please note, there will be assignments not listed on the schedule. Details will be given in class.**

Week	Date	Topic	Reading and Assignments	Lab
1	1/13 1/15	Syllabus and introductions Lecture 1: Principles of Science	 -Read: Ch. 1; assignment: Scientific Method	Lab#1: Biological Concepts
2	1/20 1/22	Holiday Lecture 2: Chemistry & Water	 -Read: Ch. 2	Holiday W lab- TBA
3	1/27 1/29	Lecture 3: Chemistry of Life Lecture 4: Origin of Life, Cells	-Read: Ch. 3; assignment: Biomolecules -Read: 292-298, 54-60	Lab #2: Water
4	2/3 2/5	Lecture 5: Cell Structure, Function Catch up and Review #1	-Read: 299-306, Ch. 4; assignment: Cells Biomolecule Extra Credit due	Lab #3:Enzymes
5	2/10 2/12	**Test #1** Lecture 6: Growth & Mitosis	 Read: 563-567, 120-129	Lab #4: Microscopes and Cells
6	2/17 2/19	Holiday Lecture 7: Meiosis & Gametogenesis	 -Read: 130-140, 554-557, 562; assignment: Mitosis & Meiosis	Holiday W lab- TBA
7	2/24 2/26	Lecture 8: Animal Reproduction Lecture 9: Genetics	-Read: 551-553 -Read: Ch. 9	**Lab Exam #1**
8	3/2 3/4	Lecture 10: Genetics Genetics continued	 -Assignment: Breeding Aliens	Lab #5: Mitosis
9	3/9 3/11	Catch up and Review **Test #2**	-Genetics Extra Credit due	Lab #6: Meiosis
10	3/16 3/18	**Spring Break**		
11	3/23 3/25	Lecture 11: Theory of Evolution Lecture 11: Theory of Evolution	-Read: Ch. 13, 268-277	Lab #7: Genetics
12	3/30 4/1	Lecture 11: Theory of Evolution Lecture 12: DNA History & Structure	 -Read: 170-175	Lab #8: Evolution
13	4/6 4/8	Lecture 13: DNA Replication & Gene Expression Lecture 14: Plants & Protists	-Read: Ch. 10; assignment: DNA structure and replication -Read: 307-311, 316-327	**Lab Exam #2**
14	4/13 4/15	Lecture 15: Plant Structure & Photosynthesis Catch up and Review #3	-Read: 613-616, Ch. 28, 629-631, Ch. 7 -DNA extra credit due	Lab #9: Protists
15	4/20 4/22	**Test #3** Lecture 16: Animal Diversity	 -Read: Ch. 17	Lab #10: Plants
16	4/27 4/29	Lecture 17: Animal Tissues and Organ Systems Lecture 18: Respiration	-Read: Ch. 21 -Read: Ch. 6, 509-513; assignment: cell respiration	Lab #11: Animals
17	5/4 5/6	Lecture 19: Digestion Lecture 20: Ecology	-Read: Ch. 22 -Read: Ch. 18, 440-443	Lab #12: Fungi
18	5/11 5/13	Lecture 21: Ecological Interactions Final Review	-Read: Ch. 19, Ch. 20 -Activity Log Extra Credit due	**Lab Exam #3**
19	5/20	**Final Exam 7-9:45am**		

Ideas to help you excel in this course

1. **Attend class regularly**. All assessment is based on the lecture and labs (not on the book). If you are absent, you are missing out on vital information. Additionally, future topics demand an understanding of topics learned earlier in the quarter. If you don't learn early on, you'll struggle later.

2. **Create a schedule for yourself**. Write down everything you have to do in your personal life and schedule time for your student life. Look over the syllabus, schedule time for reading, completing your assignments and studying. I strongly encourage you to complete the reading prior to class, review your notes and study prior to the next class session, and complete weekly vocabulary and question lists prior to the next week.

3. **When you study, do nothing else**. Turn off the T.V., the computer, your phone, etc. If your house is too hectic, study in the library. If you aren't focusing, you aren't learning.

4. **Make flash cards and practice tests**. Studies have shown that the best way to learn is to challenge yourself to recall the answer. If all you do is read over your notes, the information won't stick as well. Flash cards are a great way to memorize vocabulary. Practice tests will help you to explain topics in depth, identify the things that you don't know and need to review, and will reduce testing anxiety. If you're a social learner, study in a group and take turns explaining answers to each other.

5. **Do not wait until there's a test to study**. Review your notes daily. Make sure you understand all of the topics from a lecture prior to the next scheduled lecture. One tactic some students have found to be helpful is rewriting the notes after each lecture. This way, you can easily identify anything you missed or didn't understand. Learn the weekly vocabulary and answer questions as soon as you receive your worksheet.

6. **Get organized.** Keep a binder with lecture notes and other handouts.

7. **Use the lab time to learn**. This is the time for you to apply what you learned in lecture, so don't rush.

8. **Ask questions if you don't understand**. There are no stupid questions. I'm happy to explain things in more depth when required, and will meet with you outside of class when necessary. If you're struggling, let me know. I'm here to help.

9. **Make friends**. If you're absent, you can copy their notes. You can study and learn together.

10. **Follow instructions**. I try to give detailed instructions for all assignments. If you don't follow the instructions, your assignment will be incomplete and your grade will be lowered. Most assignment grades are based on whether you included all of the information you were supposed to, answered all of the questions, and followed the proper format.

11. **Don't miss a lecture test or lab exam!** Together, they account for 64% of your grade. Review the schedule and make any accommodations necessary to be in class on those days. By registering for this class, you have made a commitment to be in class during the scheduled class time.

Biology 10: Introduction to Principles of Biology
Course Contract
Spring 2020

I have read, understand and agree with all of the terms of the Biology 10 syllabus.

I understand what the assignments are, when the exams are scheduled, and the criteria for grading and will do my best to succeed in this course.

I understand that I must get prior approval from the instructor in the event that I will be absent from an exam, otherwise I will receive a zero on the missed exam.

I understand the proper way to conduct myself, and I will not be permitted to remain in lecture, the laboratory or on a field trip if my conduct is inappropriate.

Ultimately, I understand what is expected of me and take full responsibility for my grade in this course.

I have kept a copy of this contract for my records.

_____

Print Last name **First name**

_____

Signature **Date**

Please return this signed contract by the second day of class to continue your enrollment.