BIOLOGY 10.09 & 10.10 – INTRODUCTORY BIOLOGY – WINTER 2013

4 hours lecture/3 hours lab (5 units)

- **Lecture in E35 Tues AND Thurs: 9:30 am – 11:20 am**
- **Lab in S51 Tues OR Thurs: 11:30 am – 2:20 pm**

Instructor: Jason Bram *Office:* Bldg. S5, Room S51a

Office Hours: Mon/Wed 5:30-6:30 pm, Tues 5:15-6:15 pm, Thurs 2:30–3:30 pm and always by appt.

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Phone #: 408-864-8654

Instructor webpage: http://www.deanza.edu/faculty/bramjason **(not important!)**

Catalyst webpage: https://catalyst.deanza.edu/ **(very important!)**

Connect webpage: http://connect.mcgraw-hill.com/class/j_bram_wiinter_2013_tuesday_thursday **(very important!)**

You can use the instructor webpage to read a bit more about me! You can also find links to Catalyst and Connect, but the webpage is more for people outside the class to find out more.

We will be using the Catalyst webspace to

1. keep up on course announcements and deadlines (as a student you are responsible for any info/announcement made in class and/or put on Catalyst)
2. turn in some assignments like the extra credit paper and the field trip. I prefer electronic copies to hard copies because there is then some record of you turning it in!
3. track your grade in the course (take your points, divide by total possible to see your percentage and then refer to this greensheet!)
4. access course files like greensheets, lectures, labs, videos, and study guides.
5. contact me or each other

Please let me know as soon as possible if you have any questions/problems with accessing Catalyst.

We will be using the Connect webspace to

1. turn in your weekly homework assignments
2. give you an added resource to aid in your success!!!

Please let me know as soon as possible if you have any questions/problems/concerns with accessing Connect. Please note: this is my first quarter using Connect, so some "hiccups" may occur!

Why Connect? A common question from past students has been "How can I do better?" Connect gives you an online tool that should help you in the course. You have the choice of utilizing very little (just to complete your homework assignments), or you can use it "hardcore" to go over the material in a lot more detail. It is up to you!!! However, having Connect access is mandatory for the course!!!

Textbook webpage (good resources for you, but not mandatory!):
http://highered.mcgraw-hill.com/sites/0073525510/student_view0/
This can also be accessed via Connect!

INTRODUCTION: **Welcome to Biology 10 and the study of the wondrous array of life and adaptation on our planet!** For most students this is an astounding, interesting, sometimes awe-inspiring and hopefully quite fun view of biology as we know it. This 5-unit course is an introduction to the wonderful diversity of life on earth, life's levels of complexity (from molecule to biosphere), and how plants and animals work as individuals and as parts of populations, communities and ecosystems. The course is intended for **non-biology majors**, and my goal as your instructor is to help you achieve a good understanding of the basic principles of life on earth! I also hope that you will develop a lifelong appreciation of biology – you will see for yourself that understanding biology makes the world a much more interesting place!

COURSE DESCRIPTION: An introduction to biology as a branch of the biological sciences and to its basic unifying principles, with selected application to the scientific method, evolutionary concepts, genetic modification, biotechnology, ecology, ecological crises and human impacts. This course satisfies the De Anza General Education Requirement in Natural Sciences and is transferable to both UC and CSU as a general education science course. This course does **NOT** apply towards a major in biology.

ADVISORY: English Writing 100B, and Reading 100 (or Language Arts 100) or English as a Second Language 24 and 72 (or ESL 4)

TEXT: *A textbook is required, but you have some choices!!!*

BEST CHOICE (highly suggested): Buy the customized version of Essentials of Biology by Sylvia S. Mader 3rd edition. 2012 McGraw Hill Higher Education with Coonect (ISBN 9781121765566). It's $103.90 at the De Anza Bookstore and can only be purchased through them as it is a custom book. The "normal" textbook without Connect is $50 more at the bookstore!!!

The best way to use the text is as a reference. My tests come from my lectures, AND MY LECTURES COME FROM THIS BOOK so if there's a concept that I go over in lecture that you need further information on, this textbook is a GREAT resource!

SECOND BEST CHOICE: Buy the e-book with Connect for $71.25 directly through the publisher. The positive is that you save around $30 and you get access to the full book. The negative is that it's an ebook and you will lose access to it next year. I personally like having a book that I can touch and refer to later, but this option may work for you.

THIRD BEST CHOICE: Have any decent textbook and purchase Connect access, either through the bookstore or through the publisher. The access is around $40.

For the lab, the **required** text is the BIOL 10 Lab Manual, by Judy Cuff-Alvarado. ISBN: 9782812350740. This can be found at the De Anza Bookstore and is only $13.

COURSE REQUIREMENTS AND EXPECTATIONS: You are expected to attend every class meeting. If you miss a class, it is your responsibility to obtain information and materials dispensed in that class period. Attendance and participation will be the first criteria considered when determining "borderline" grades. In my experience, those students who do not attend class are the students who do not fulfill their potential regardless of their level of understanding. Medical, legal and other scheduled appointments should not be scheduled during normal class times and these will not be considered as excused absences. Medical or personal emergencies will require a written notice of the specific problem signed by an appropriately qualified individual.

Disruptive behavior will not be permitted in lecture. The lecturer will determine what constitutes disruptive behavior at his discretion, and disruptive students may be asked to leave. Here are some general rules:

- **Arrive to class on time, and do not leave early.**
- **No use of cell phones, MP3 players, text messaging, or pagers during lecture.**
- **Do not converse with your classmates (or yourself!) while the instructor or other presenter is addressing the class. If you have a question or discussion item, please raise your hand.**
- **Be respectful of your instructor, college staff, and your fellow students.**

I WELCOME AND ENCOURAGE YOU TO ASK ME QUESTIONS DURING LECTURE!!! IF I DON'T KNOW THE ANSWER, I WILL FIND YOU THE ANSWER!

ASSIGNMENTS	**DATE**	**POINTS**
Three Lecture Exams:	**Jan. 31, Feb. 28, March 29**	100 pts. each
(non-cumulative, highest score is counted twice) 400 points total for lecture exams!!!		
Two Lab Exams:	**Feb. 12/14, March 19/21**	75 pts. each
Weekly Assignments (on Connect)	**various dates**	50 pts. (5 pts. each)
(All chapters covered will be available via Connect. Only 10 need to be completed for credit, so you can choose the 10 chapters you want to do in the quarter)		
Lab Attendance/Participation:		40 pts. (5 pts. for each lab)
Fieldtrip:		20 pts.
Group Project Presentations:	**March 11/13**	30 pts.

690 TOTAL POINTS POSSIBLE!!!

EXTRA CREDIT POINTS

Participation	**up to 20 pts.**
Paper (to be turned in as a Microsoft Word Attachment via Catalyst)	**up to 20 pts.**
Tutoring (opportunity will be presented early in the quarter)	**up to 20 pts.**

Note: Students who exceed 4 absences (LECTURE & LAB) are not eligible for the Participation extra credit. YOU CANNOT EXCEED 50 PTS. OF EXTRA CREDIT FOR THE QUARTER!!!

GRADING: Final letter grades shall be assigned in accordance with the following percentages:

A+	=	95% or higher	655 points or higher
A	=	91-94%	628-654
A-	=	88-90.9%	607-627
B+	=	85-87.9%	586-606
B	=	80-84.9%	552-585
B-	=	76-79.9%	524-551
C+	=	71-75.9%	490-523
C	=	63-70.9%	435-489
D	=	53-62.9%	366-434
F	=	52.9% and below	365 points or lower

Note: I do not curve the grades for the course. IT IS IN YOUR BEST INTEREST NOT TO SETTLE ON A GRADE!!! EACH OF YOU DESERVES THE BEST GRADE THAT YOU CAN ACHIEVE!!! DO NOT HESITATE TO TALK TO ME IF YOU ARE FINDING YOURSELF LOST, CONFUSED, OVERWHELMED, BORED OR SCARED ABOUT YOUR GRADE OR ANY OF THE INFORMATION PRESENTED AT THE EARLIEST POSSIBLE SIGN THAT YOU ARE HAVING DIFFICULTY.

EXAMS: Each of the exams will consist of a combination of multiple choice, short answer, matching, and fill-in-the-blank questions.

1. The lecture exams will only cover the material within that time period (i.e. the 2nd lecture exam will only cover the material presented AFTER the 1st exam).
2. I will be providing reviews for the lecture exams for you to study from, but in no way are they substitutes for coming to class!!!
3. You CANNOT make up an exam!!! This is not fair to the other students.
    a. It is my experience that certain students always seem to have emergencies come up on exam days. I have found that when I'm "nice" to students, they abuse the privilege. Please be a responsible individual!
    b. In saying all this, if an uncontrollable emergency or personal crisis arises, I occasionally will allow make-ups for **responsible** individuals, but they are few and far between. If something does happen, let me know the situation as soon as you can, and I will be more flexible. You will need to provide some sort of documentation (i.e. a doctor's note, etc.)
        i. IF THIS HAPPENS, IT CAN ONLY HAPPEN ONCE! IF IT HAPPENS MORE THAN ONCE, YOU HAVE MORE IMPORTANT THINGS TO WORRY ABOUT THAN THIS COURSE!!!
4. For the lab exams, seating will be assigned.

IMPORTANT NOTES REGARDING THE PROJECT PRESENTATION: This will be a group project, and you will receive a group grade. You are required to orally present (as a group) a 4-6 minute seminar/presentation based on a topic in biology. A video/other creative activity may be done in lieu of the presentation. This project will be gone over in class around the middle of the quarter.

Project Presentation rubric

	Great	Okay	Doesn't do it
Does the group structure their presentation effectively?	5	3	1
Does the group seem to understand what they are presenting?	5	3	1
Does the group effectively use visual aids? (i.e. Powerpoint slides)	5	3	1
Does the group have good content?	5	3	1
Does the group provide three usable questions for the lab exam? (must be multiple choice with at least 3 choices)	5	3	1
Participation in the group (turn in on day of presentation – your contributions and what others contributed)	5	3	1

IMPORTANT NOTES REGARDING THE FIELD TRIP: You need to go somewhere biologically related (i.e. aquarium, zoo, etc.) on your own (or with me). If you go on your own, you must write me a 1-2 page report (double spaced) telling me about your experience. You also must include a picture of yourself at the place you go. This field trip report MUST be biologically related (i.e. your surf trip to the beach doesn't count, but your trip to the beach where you carefully examined the life at the beach (not the sunbathers!) does.)

Please let me know if you have any concerns/questions. I will be providing field trip opportunities for you throughout the quarter.

IMPORTANT NOTES REGARDING THE LABORATORY ASSIGNMENTS AND THE LAB ITSELF:

1. **No eating, drinking, smoking, or sewing (especially no sewing!) allowed in the laboratory!**
2. **You are expected to attend all labs. If more than one lab is missed without a reasonable excuse, you may be dropped from the course! If three labs are missed, you will be dropped from the course!!!**
3. **If you miss a lab, you are responsible for finding out what you missed. If you don't, your lab test grade will most likely suffer tremendously! You MUST attend the lab that you are signed up for unless you clear it with me beforehand. If you miss the Monday lab for example, you cannot make up the lab by attending the Wednesday lab UNLESS you have cleared it with me in advance. If you do show up for the wrong lab, you WILL NOT get credit for attending UNLESS you have cleared it with me in advance. I've had too many Monday lab students "magically" start coming to the Wednesday lab on exam weeks.**
4. **Grading: You are responsible for attending lab and completing all the work required in lab. Your attendance in the lab won't be recorded until the end of class and you show me that you have completed your work.**
5. **The lab tests will be based solely on the labs that we do in class, so it's definitely in your best interest to be there!!!**
6. **Like the lecture exams, the lab exams are non-cumulative.**

SCHEDULE: The following schedule may be modified during the course at my discretion.

DATE	LECTURE TOPIC	LAB
1/8	Course Introduction (Chapt. 1)	Lab #1 – Intro
1/10	Chemistry (Chapt. 2)	Lab #1 - Intro
1/15	Molecules (Chapt. 3)	Lab #2 – Cells & Tissues
1/17	Cells (Chapt. 4)	Lab #2 – Cells & Tissues
1/22	Energy (Chapt. 5)	NO LAB! FIELD TRIP!
1/24	Photosynthesis (Chapt. 6)	NO LAB! FIELD TRIP!
1/29	Cellular Respiration (Chapt. 7)	Lab #3 - Biotechnology
1/31	LECTURE EXAM #1 (includes material covered 1/10 – 1/29)	Lab #3 - Biotechnology
2/5	Cellular Respiration (Chapt. 7)	Lab #4 - Enzymes
2/7	Cell Division (Chapt. 8)	Lab #4 - Enzymes
2/12	Sexual Reproduction (Chapt. 9)	Lab #5 – Cell Division/Project Presentation Assignment/**Lab Exam #1 (Labs 1-4)**
2/14	Genetics (Chapt. 10)	Lab #5 – Cell Division/Project Presentation Assignment/**Lab Exam #1 (Labs 1-4)**
2/19	DNA & Protein Synthesis (Chapt. 11)	Lab #6 – Genetics & Meiosis
2/21	Evolution (Chapt. 14-16)	Lab #6 – Genetics & Meiosis
2/26	Microbial Life (Chapt. 17)	Lab #7 – Animals & Plants
2/28	LECTURE EXAM #2 (includes material covered 2/5 – 2/26)	Lab #7 – Animals & Plants
3/5	Plants/Fungi (Chapt. 18)	Lab #8 – ESA Tour/Ecology
3/7	Animals (Chapt. 19)	Lab #8 – ESA Tour/Ecology
3/12	Ecology (Chapt. 30-32)	Lab #9 – Project Presentations/Review
3/14	Catch-up Lecture	Lab #9 – Project Presentations/Review
3/19	Catch-up Lecture	**Lab Exam #2 (Labs 5-9)**
3/21	Catch-up Lecture	**Lab Exam #2 (Labs 5-9)**

MONDAY 3/25 OPTIONAL REVIEW IN SC1102 2:30 – 4:20

Friday, March 29th FINAL EXAM (9:15 am – 11:15 am) IN THE CLASSROOM!!!
(includes material covered 3/5 – 3/21)

ALL ASSIGNMENTS/EXTRA CREDIT/EVERYTHING MUST BE SUBMITTED VIA CATALYST/CONNECT BY 11:59 PM ON 3/29!!!

EXTRA CREDIT: THIS IS NOT REQUIRED!!! However, I highly suggest doing all of the extra credit or you really only have yourself to blame for not receiving the grade that you want to get in this course!

You can earn up to 50 points by doing the following:

1. Participation (20 points maximum): These are my subjective points and are based on attitude, completed assignments, effort, and all around being a positive addition to the class. If you do this, you can safely assume that you will receive all of these points. These points are designed to bump deserving students up to the next highest grade as well as to

eliminate "begging" at the end of the quarter. These points WILL NOT be posted to Catalyst, as many students will not need "bumping" up or that "bump" won't push the student to the next highest grade. Please note that these points can be adversely affected by anything that doesn't show the utmost in responsibility as a student.

2. Scientific paper summary & opinion paper (20 points maximum):
    a. Write a 2-3 pg. double-spaced summary of a provided scientific paper (papers will be posted to Catalyst) (up to 10 points)
    b. Write a 1-2 pg. double-spaced opinion of the paper or the issue that the paper brings up. (up to 10 points).
3. By signing up for tutoring for this class (someone will be coming by to describe this opportunity) – up to 20 points. If you do the tutoring, you do NOT need to do the opinion paper described in #2b, only the summary.

REMEMBER THAT I WON'T GIVE ANY PARTICIPATION EXTRA CREDIT FROM THOSE STUDENTS WHO HAVE MORE THAN 4 ABSENCES IN THE QUARTER (LABS & LECTURES).

CHEATING: Absolutely no form of academic dishonesty or plagiarism will be tolerated. It is unethical, unfair, and a violation of your own intelligence as well as being lame, slimy, vile, and pathetic. **Anyone caught cheating will be subjected to the most severe academic penalties.**

ESSENTIAL STUDENT MATERIALS: Scantrons, #2 pencils, e-mail, textbook, and lab manual.

WITHDRAWAL AND YOUR CONCERNS ABOUT YOUR GRADE: Saturday, Jan. 19th is the last day to drop the course and receive a refund (Saturday, Jan. 12th for out-of-state and foreign students). The last day to withdraw from the course (without a "W") is **Monday, Jan. 21st**. The last day to withdraw from the course (with a "W") is **Friday, March 1st**. IF YOU ARE CONCERNED ABOUT YOUR GRADE, PLEASE COME TALK TO ME AT THE EARLIEST POSSIBLE TIME SO THAT WE CAN DISCUSS YOUR OPTIONS. It is to your great advantage to discuss with me (I don't bite!) any problems you are having early in the quarter so that I can try and assist you as much as possible.
IT IS YOUR RESPONSIBILITY TO OFFICIALLY WITHDRAW SO THAT YOUR TRANSCRIPT RECORD WILL NOT BE ADVERSELY AFFECTED.

NOTE to students with disabilities: If you have a disability-related need for reasonable academic accommodations or services in this course, provide (name of Instructor) with a **Test Accommodation Verification Form (also known as a TAV form)** from Disability Support Services (DSS) or the Educational Diagnostic Center (EDC). Students are expected to give five days notice of the need for accommodations. Students with disabilities can obtain a TAV form from their DSS counselor (864-8753 DSS main number) or EDC advisor (864-8839 EDC main number).

PLEASE NOTE: I keep exams for 1 year and other work for 1 quarter.

SOME EXTRA NOTES AND HINTS TO BE A SUCCESSFUL COLLEGE STUDENT (from my own experience)!

1. **SHOW ME THAT YOU CARE ABOUT YOUR GRADE MORE THAN I CARE ABOUT YOUR GRADE!**
2. **ATTEND CLASS!!!**
3. **If you miss a class, get the notes from another student. If it's still unclear, then ask your professor!!!**
4. **Don't be afraid of a professor's office hours!**
5. **Don't be afraid of your professor! We are generally reasonable people! Talk to me! Ask me questions, no matter how stupid you may think they are!!!**
6. **Make your professor respect you! (see #1)**
7. **Don't procrastinate!**
8. **Remember that in the end, it is your responsibility to understand the assignment, not for your professor to explain it better!**
9. **Feel free to change your major!**
10. **Don't give your professor attitude. Remember that even if they're the biggest jerk ever, they have the power. Think of them as your boss. If you have a disagreement, bring it up after class/in office hours. (See #5)**
11. **Remember that there is some subjectivity in determining your grade.**
12. **Don't let up!**
13. **Being a student should be your #1 priority (if possible). BEING A STUDENT IS YOUR EMPLOYMENT. This of the college as the place that you work. Unfortunately, you don't get any wages except for the grades you receive, but in the end, those grades can lead to a much better future than a few bucks can!**
14. **Don't be in a hurry – what's another quarter/semester?**
15. **Study in a way that's best for you, whether that be in groups, at Starbucks, in a library, cramming, whatever!!!**
16. **Take advantage of extra credit!**
17. **Take advantage of opportunities presented (i.e. review sessions/study guides)!**
18. **A W is better than a D or F!!!**
19. **It's a competitive world. Be competitive in college! Don't settle!!!**

STUDENT LEARNING OBJECTIVES:

1. Evaluate the correlation of structure and function in plants and animals.
2. Identify and explain the characteristics of life.
3. Demonstrate an understanding of the impacts of human activities on the biosphere.
4. Apply principles of the scientific method to everyday problems.

COURSE OBJECTIVES:

Upon completion of the course students will be able to:

A. Analyze the scientific method as an indispensible tool of investigation.

B. Evaluate the characteristics of life.

C. Analyze the molecular structure and function of the cell, its organelles and the coordination of cellular activities and processes in the organism.

D. Summarize the processes of cellular and human reproduction

E. Evaluate the scientific evidence supporting the theory of evolution.

F. Appraise and analyze the components and interrelationships of communities, ecosystems and the biosphere.

G. Assess the impacts of human activities on the biosphere

H. Inventory the historical roles and contributions of pioneers of scientific research.

EXPANDED DESCRIPTION: Content and Form

A. Analyze the scientific method as an indispensable tool of investigation
    1. Formulate and solve problems utilizing the scientific method, including hypothesis development, prediction, and experimentation.

2. Evaluate the terms "hypothesis" and "theory" in common and scientific language.

B. Evaluate the characteristics of life.
    1. Compare and discuss the basic properties shared by all living things: cellular organization, metabolism, homeostasis, growth and reproduction, and heredity.
    2. Examine levels of biological organization and the hierarchy of complexity demonstrated by organisms of the living world.

C. Analyze the molecular structure and function of the cell, its organelles and the coordination of cellular activities and processes in the organism.
    1. Discriminate between the structure and the evolutionary history of Eukaryotic and Prokaryotic life forms and the kingdoms of life associated with these domains.
    2. Compare and contrast the basic molecules of life: proteins, carbohydrates, lipids, and nucleic acids.
    3. Evaluate basic organelles of the cell and describe their role in cell processes such as photosynthesis, cell respiration, cell transport, cell division.
    4. Compare prokaryotic and eukaryotic cells and their evolutionary history.
    5. Examine some of the specific human health problems related to abnormalities of cell structure or biochemistry (e.g., sickle cell anemia, Tay Sachs, cystic fibrosis)

D. Summarize the processes of cellular and human reproduction.
    1. Compare and contrast mitosis and meiosis, the phases and subphases of the cell cycle and the role these processes play in reproduction, growth and cell repair.
    2. Appraise genetics and the transmission of genes from generation to generation, distinguishing different patterns of inheritance and examining molecular genetics.
    3. Examine the consequences of errors that may occur during mitotic or meiotic cell divisions including: silent mutations, Down Syndrome, Turner Syndrome, and various forms of cancer.

E. Evaluate the scientific evidence supporting the theory of evolution.
    1. Compare and contrast scientific evidence such as the fossil record, the molecular record, the anatomical record including homologous and analagous structures.
    2. Analyze natural selection, the process that has led to the diversification of life forms and the development of adaptations of organisms to their environment and their interdependent relationships
    3. Assess evidence that human activities result in selection on other species (e.g., antibiotic resistance in bacteria, pesticide resistance in insects, introduced species, and artificial selection)

F. Appraise and analyze the components and interrelationships of communities, ecosystems and the biosphere.
    1. Diagram and examine trophic pyramids, energy pyramids, food chains and food webs.
    2. Analyze the flow of energy and cycling of materials in ecosystems
    3. Compare and contrast the earth's terrestrial and aquatic ecosystems including biomes and plant communities such as: the desert, tropical rain forest, foothill woodland, riparian, chaparral, redwood, marsh and estuary.

G. Assess the impacts of human activities on the biosphere.
    1. Examine and discuss the causes and impacts of global climate change, deforestation, marine fisheries depletion, in historical and current perspective.
    2. Evaluate the evolution of human ecology (from hunter/gatherers, pastoralists, to agriculturalists and to more modern industrialists) and discuss its impact on the earth.
    3. Estimate the environmental consequences of human inaction and propose changes that may reduce the rate of global climate change.

H. Inventory the historical roles and contributions of pioneers of scientific research.
    1. Assess the work and research results of leading biologists over time, such as Darwin, Gould and Eldredge, McClintock, Watson and Crick, and Franklin
    2. Examine scientific contributions of physicians and scientists in various cultural groups throughout history.