Bio 9: Human Biology Spring 2011

Course Syllabus
Course number: 30692
Section: 009 Room: S307
Monday/Wednes/Thursday 12:00pm- 2:00pm

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Office Hours: Wednesdays 2:00pm- 3:00pm in S350 or by appointment
BRC hours: Wednesdays 2:00pm-4:00pm in Biology Resource Center, S350

Course description
Bio 9 is a four-unit course introducing the major topics of the biological sciences from a perspective that emphasizes relevance to the human experience. The course consists of 3 lecture units and one lab unit, and is CSU and UC transferable. The course is intended to introduce relevant, engaging biology knowledge for the general education of non-major students. It fulfills the Natural Sciences requirement (Area C) for an A.A. degree at City College.

Course Content
The course format consists of 3 hours of lecture and 3 hours of laboratory per week supplemented by video clips, and activities. Laboratory activities are scheduled to follow lecture topics and will include the study of microscope slides, models, specimens, dissections, and experiments. Major topics include biological chemistry, cell structure and function, human body systems, physiology, DNA, evolution, ecology, human development, genetic inheritance, and biotechnology.

Prerequisites
While there are no prerequisites for the class, it is expected that students are prepared for work at a level of English proficiency comparable to the level of English at which the textbook is written and the lectures are presented. The school therefore has placed on the course an advisory of a level of proficiency corresponding to ESL 140, or ENGL 90. Students benefit from a high school biology and chemistry background, as the most basic concepts of these subjects are covered fairly rapidly. Math proficiency at the level of high school algebra is also expected. Since the course is intended for transfer to a four-year institution, appropriate academic standards will be maintained.

Course Objectives
Major instructor objectives for this course:

- To present basic principles of major topics in human biology, including those pertaining to Evolution, Cellular structure, Genetics, DNA and biotechnology, the major human body systems and their roles in the body, homeostatic mechanisms, health and disease, and ecology
- To use scientific reasoning principles to form hypotheses, create experiments, conduct them, and evaluate the data in order to evaluate those hypotheses
- To apply knowledge gained in class to critically evaluate articles and claims from mainstream media, evaluating them both from a scientific and ethical perspective

- To present life directions made open by knowledge of science, as gained in class, and as available through further pursuit of science knowledge.

Required Materials

- **Textbook**- Goodenough and McGuire, "Biology of Humans", 3rd edition, 2010. A single copy of the textbook is available for use in the Biology Resource Center, S350, and 3 or 4 copies are available in the Rosenberg Library on 2-hour and 24-hour reserve. Alternatively, back editions may be purchased, but students are responsible for any differences between the editions.
- **Laboratory Manual**- There is no laboratory manual for the class. Laboratory exercises are posted online at the class website, fog.ccsf.edu/dvandepo. Students must print and read the handouts ahead of time, and bring the printed documents to class.
- **Clicker-** In addition, purchase of a "clicker" device is required. The biology department uses a common standard, the iClicker. It is available at the Bookstore Annex. Alternatively, students who own wireless-capable devices- that is, laptops, tablet devices and smart phones, may purchase a web-clicker license at a lower price. The deadline for obtaining a clicker is next Friday, January 28.

Adding the class

Students wishing to add must be prepared with proof of original registration. Students absent for the first and second days of class will be dropped to make room for students present and wishing to add. Student adds will be done on Friday, January 21. According to school-wide policy, students are added to fill available spots in order of registration date. Students forging registration dates will be moved to the end of the line for registration. Students will be added based on the availability of seats in the classroom. It is the student's responsibility to make sure she/he is properly enrolled. **Under no circumstances will anyone be admitted into the class after the add deadline, February 5.** Students who decide to terminate enrollment must file the proper forms by the college deadlines. Failure to do so may result in a final grade of "F". The deadline for withdrawal this semester is Thursday, April 21st.

Attendance

Punctual student attendance of lectures is required. CCSF considers missing more than two weeks of class time sufficient grounds for removal from any course; since this class meets three times per week, this is equal to six class sessions. Students missing more than six class sessions before the drop deadline may be dropped from the class. Furthermore, since points are allotted by participation by clicker, any absence, including tardiness, has a negative effect on a student's grade. Students are not allowed to leave class early. Leaving class early counts as an absence.

Grading

40% of a student's grade is earned in lecture exams; 30% is earned through lab work and in-class assignments. 20% from quizzes and homework assignments, and the remaining 10% is earned through interactive technology assessments. To minimize intra-class competition, and encourage cooperation, grades will not be curved except under extraordinary circumstances. Studying in groups is encouraged. The grading scale for Bio 9 is as follows:

>90% = A 80-89% = B 70-79% = C 60-69% = D <60% = F

Exams- There will be four midterm exams, each worth 100 exam points. The lowest of these scores will be dropped. There will be a 150 point final comprised of a 50-point comprehensive portion and a standard non-comprehensive portion. The exams will be approximately half multiple choice; the remainder will consist of short answers, diagramming, problem solving, and usually a 10-point essay question. However, the exam design may be flexible in accordance with the material studied. The exam dates listed on the syllabus are subject to change, with the exception of the final. No make-up exams will be allowed except under extraordinary circumstances. Advance arrangements may be made for important scheduling conflicts given prior notification. Expect an all-essay exam under those circumstances. In accordance with school policy, only students with DSS documentation can be allotted extra time for an exam. ESL students are responsible for the level of English proficiency at which the class is taught, and are not allowed to use dictionaries during exams or quizzes, nor can they be given extra time to complete exams.

Laboratory- Lab grades will be earned by completion of lab worksheets as handed out on the day of labs. As the labs are run on a strict schedule, lab work cannot be made up in the event of a student absence, regardless of the cause. Students are expected to abide by all safety procedures, to have read the background material and procedure to each lab *before* the lab begins, and to clean up according to spoken instructions.

Quizzes and Homework- Weekly quizzes and multiple homework assignments will be given. The quizzes usually will be multiple choice, worth 10 points, and intended to provide students with feedback on the level of difficulty which can be expected for future exams. The two lowest quiz scores will be dropped. Homework assignments will vary; at least one will involve outside research on a biology subtopic of your choosing through recent periodical literature. Late assignments are not accepted.

Interactive- Ten percent of class grades are earned through interactive technology assessments. This includes online quizzes provided by the textbook publisher (1/2), as well as in-class participation through the use of clickers (1/2).

Cheating

Students caught cheating on quizzes or exams will receive a zero for that exam. Further consequences may be enacted per the Rules of Student Conduct as described on the school website: http://www.ccsf.edu/cgi-bin/htsearch.pl. Cheating includes consulting any written material or electronic devices unless directed to do so, verbal or non-verbal communication with any person other than the instructor, or copying/looking over at another student's work during examinations. Use of cellular phones, digital dictionaries or other such equipment during a quiz or exam is considered cheating.

Plagiarism

The most basic definition of plagiarism is “taking the work, words or ideas of another person, and presenting them as your own.” Plagiarism is a basic form of cheating, and students plagiarizing peers or outside sources will receive a zero for any assignment pertinent to the

plagiarism. In addition, such plagiarism, as in any form of cheating, may be dealt with according to the school policy on academic dishonesty.

Honors
Students wishing to take honors classes may discuss the matter with me personally after the second midterm. It is expected that students taking honors be able to succeed in the normal class at the level of B or better.

Course Credit for Work Experience
Students who work or volunteer in a field relevant to the class are wish to earn additional units of course credit are encouraged to consider Bio 92 "Off-campus Bio Work Experience". Contact instructor Crima Pogge (cpogge@ccsf.edu) for details. Note that add deadlines apply.

How to succeed in Bio 9

1. **Set yourself up for success.** Students wishing to achieve their academic goals first must have academic goals. Know what you want from the class before you begin. Once you have determined what you want from the class, make sure your circumstances are such that you have a good chance to achieve those goals. Specifically, consider the following:
    a. Dedicate time-Most people suggest at LEAST two hours' study for each hour of class time. With a full-time or part job, or with a heavy courseload, this standard becomes difficult to achieve. Don't bite off more than you can chew. Many students do so anyway; those students should be aware they cannot be given special privileges, no matter their personal circumstances.
    b. Make sure you're academically prepared- students with solid backgrounds in English, math, and at least some science are often able to perform better with less work. Be ready to meet the level of instruction at which the class is taught.
2. **Attend all classes**. As much of the work is interactive, attendance has a direct effect on grades. To attend a class is to become accustomed to the voice and values of the person who writes the exam. The single most important thing a student can do to positively influence his or her learning and grade is attend class.
3. **Keep apace.** Students should read the material before the class in which it is taught. Do not fall behind.
4. **Exploit available resources.**
    a. The Biology Resource Center (BRC, aka the Batlab)- in room S350 (at the end of the hall) is a study hall for student use featuring resources such as old-edition textbooks. CCSF Biology instructors volunteer their time there in order to allow students a place to study individually or in quiet collaboration, and to provide individual tutoring to those students who ask for it. Wireless access is available for students with laptop computers (registration with the Campus Wifi may be necessary). Hours TBD, with the BRC opening in the 2nd week of class.
    b. The MESA/STEM center- located in S142 on the first floor. Food and drink are allowed, and computer stations with internet are available. Direct instructor tutoring in Biology as well as Chemistry, Physics, Math and engineering are also available according to schedule.

c. Knowledge of your peers- In biology, just as in all classes, students who study in groups perform better than students who only study alone. Meet your peers outside of class and share your learning. None of you is as smart as all of you.
d. Knowledge of your instructor- raise your hand in class if you don't understand something. It is my goal that everyone feel comfortable asking questions.
e. Study guides & lectures- Lectures and study guides are posted on the class website: fog.ccsf.edu/dvandepo. Many successful students print out notepapers of lecture powerpoints in advance, and use those papers to take notes.

5. **Use technique**. Flashcards, word roots, mnemonic devices, highlighters, and interactive games and videos, as available on the internet are all techniques which help you learn and remember material, often as well as conventional study. Find study techniques which fit your learning style, and exploit them to their fullest.

Special Needs

Students that require adaptations or accommodations, special arrangements in the event of an evacuation, or have emergency medical information that they should share, should make an appointment with the instructor as soon as possible. The Disabled Students Programs and Services (DSPS) offers supportive services for students with verified disabilities. The DSPS Ocean Campus office is located in the Rosenberg Library, Room 323.

Classroom behavior

As the classroom is used as a laboratory, food and drinks cannot be consumed in the classroom, and gum is also not allowed. All food and drink should be stored or placed outside. Students are required to know and observe all "Rules of Student Conduct" at all times while in class and on campus. Students have the right to an environment in which there is freedom to learn. The College believes that each student has an earnest purpose and that he/she will adhere to acceptable standards of personal conduct. We believe students deserve a safe, civil and respectful environment that will enable them to reach their full potential. To this end we expect students to assist us in this mission. Promptly report any concerns or observations you have to your instructor or appropriate authorities. We value your assistance and take your concerns seriously. Such matters will be treated as confidential to the fullest possible extent.

Tentative schedule- Subject to change

Wk	Lec	Date	Topic	Lab	Text	Details
1	1	W Jan 19	Syllabus, Intro to Human Biology		Ch.1	
	2	F Jan 21	Human biology, Scientific Method	Measurement & scientific method	Ch. 1	
2	3	M Jan 24	Evolution	Natural Selection Lab	Ch. 22	
	4	W Jan 26	Evolution	Natural Selection Lab	Ch. 22	
	5	F Jan 28	Chemistry of life- Atoms and molecules	Water quality- Day 1	Ch. 2	Bring iClickers
3	6	M Jan 31	Ecology	Water quality- Day 2	Ch. 23	
	7	W Feb 2	Human Population	Graphing human pop.	Ch. 24	
	8	F Feb 4	**Feb 3-4 Lunar New Year- No classes held**			**Feb 5- last day to add**
4	9	M Feb 7	Chemistry of water	Water solubility & pH	Ch. 2	
	10	W Feb 9	**Exam 1**			**Feb 10- Last day to drop** (no "W")

	11	F Feb 11	Macromolecules	Bacteria-Day 1	Ch. 2	
5	12	M Feb 14	Digestion	Bacteria- Day 2	Ch 15	
	13	W Feb 16	Digestion	Bacteria-Day 3	Ch 15	
		F Feb 18	**Lincoln's Birthday- No classes held**			
6		M Feb 21	**Washington's Birthday- No classes**			Feb 22- Last day to request P/NP grading
	14	W Feb 23	Nutrition		Ch 15a	
	15	F Feb 25	Nutrition, Cells	Nutrition	Ch 3	
7	16	M Feb 28	Cells		Ch 3	March 1- Deadline to submit petition for AA/AS degree
	17	W Mar 2	Cells & osmosis	Microscopes	Ch. 3	
	18	F Mar 4	Tissues & homeostasis	Microscopes	Ch. 4	
8	19	M Mar 7	Urinary system	Urinary system lab	Ch. 16	
	20	W Mar 9	Urinary system	Urinary system lab	Ch. 16	
	21	F Mar 11	**Exam 2**			
9	22	M Mar 14	Neurons		Ch. 7	
	23	W Mar 16	Neurons	Reflexes	Ch. 7	
	24	F Mar 18	Nervous system	Reflexes	Ch. 8	Mar 18- End of mid-term
10	25	M Mar 21	Drugs and the Mind	Drugs/Brain	Ch. 8a	
	26	W Mar 23	Senses	Senses	Ch. 9	
		F Mar 25	**Cesar Chavez Day- No classes held**			
11		Sa Mar 26- F Apr 1	**Spring recess- No classes held**			
12	27	M Apr 4	Senses	Vision	Ch. 9	
	28	W Apr 6	Endocrine system		Ch. 10	
	29	F Apr 8	Blood	Blood typing	Ch. 11	
13	30	M Apr 11	Circulation	Physiology	Ch. 12	
	31	W Apr 13	Circulation	Physiology	Ch.12	
	32	F Apr 15	**Exam 3**			
14	33	M Apr 18	Respiration	Physiology	Ch. 14	
	34	W Apr 20	Respiration		Ch. 14	**Apr 21**- Last day to withdraw or file for leave of absence
	35	F Apr 22	Bones	Joints	Ch. 5	
15	36	M Apr 25	Muscles	Muscles	Ch. 5	
	37	W Apr 27	Mitosis & Meiosis		Ch. 19	
	38	F Apr 29	Exam 4		Ch. 21	
16	39	M May 2	DNA & Biotechnology	PCR	Ch. 21	
	40	W May 4	DNA & Biotechnology	PCR	Ch. 21	
	41	F May 6	DNA & Biotechnology	pGLO	Ch. 22	
17	42	M May 9	Genetics	pGLO	Ch. 20	
	43	W May 11	Genetics	Genetics lab	Ch. 20	
	44	F May 13	Reproduction & development	STD/Stem Cells/ Development	Ch. 17 & 18	
18	45	M May 16	Immune system & Vaccines	STD/Stem Cells/ Development	Ch. 13	
	46	W May 18	Immune system & Vaccines		Ch. 13	
		F May 20	**CCSF final exams begin**	No classes held		
	47	M May 23	**Final Exam: 11:00am-1:00pm, S307**			

LABORATORY SAFETY GUIDELINES

1. Read all of the lab material prior to coming to class. This is a safety issue. Failure to read or understand the lab can result in hazards.
2. Familiarize yourself with emergency exits, eyewash station, fire blanket and extinguisher, first aid kit, broken glass container, and clean up materials prior to the beginning of the first lab.
3. Notify the instructor if you are pregnant or become pregnant or have any other medical condition that might necessitate special precautions.
4. Long hair should be tied back when working in the laboratory.
5. NO "horseplay" or "fooling around" is permitted.
6. NO optional or original experiments may be conducted without prior approval.
7. Do not taste any chemicals.
8. Do not pour any unused chemicals back into stock bottles.
9. Broken glass should immediately be cleaned up and discarded into the container labeled for that purpose.
10. Wear disposable gloves when handling blood or body fluids, mucous membranes, and broken skin, and/or when touching items or surfaces soiled with blood or other body fluids. Wash hands immediately after removing gloves.
11. Place glassware and plastic ware contaminated by blood and other body fluids in a disposable autoclave bag for decontamination by autoclaving or place them directly into a 10% bleach solution before reuse or disposal.
12. Wash the laboratory table surface after you have finished the activity when applicable.
13. Dispose of any trash or chemicals properly.
14. Clean all equipment and return it to the storage area before leaving the laboratory work area.
15. Report any spill, accident, or injury to the instructor immediately, and follow emergency procedures as necessary.