San Jose State University
Environmental Studies Department

1. Course Information

Instructor: Shannon Bane
Course Title: Life on a Changing Planet
Course Code: ENVS 010
Section: 01
Class Hours & Location: Mon & Wed, 9:00 AM – 10:30 AM, Clark 310
Mon & Wed, 10:30 AM – 11:45 AM, Clark 310
Mon & Wed, 1:30 PM – 2:45 PM, Clark 222
Office: WSQ 115E
Phone: 831-566-7368
Office Hours: Wed 11:45am-12:45pm and by appointment
E-mail: shannon.bane@sjsu.edu

2. Course Description

a. Course Overview

The purpose of this course is to give you the skills and knowledge necessary to critically examine biological and environmental issues. Living systems are in a constant state of change, both as a result of natural processes and human activities. The course materials emphasize the understanding of basic biological concepts and use of the scientific method to evaluate and analyze data and viewpoints that are often conflicting or incomplete, as they can often be in real life.

Students will use life science information and concepts to analyze current environmental issues, research, and policy using a series of relevant case studies developed by university instructors throughout the United States. In class lectures, films, discussions, and role-playing assignments we will investigate, critique, and compare scientific findings with public policy and perceptions.

This course is, at its heart, a biology course. What makes it different is its emphasis on environmental issues. These two subject areas are closely linked, though rarely taught together. By presenting this information together it is my hope that when you encounter biological issues in the future you will not fail to see the ecological ramifications.

Course topics include:

- Human impact on ecosystems
- Global climate change
- Cellular biology
- Evolutionary biology
- Speciation and extinction
- Community and population biology
- Biodiversity and conservation biology
- Environmental resource management
- Habitat restoration and mitigation
- Sustainable agriculture and organic labeling

b. Required Texts

Campbell, N. A., Reece, J. B., & Simon, E. J. (2004). *Essential biology.* San Francisco, CA: Pearson Education , Inc.

c. General Education Content Objectives and Student Learning Objectives

Content Objectives: This class is a Category B2 General Education course and, as such, students will develop and demonstrate the following objectives:

1) gain a basic understanding of the structures and processes of living systems;
2) learn about the scientific method and how the body of scientific knowledge advances;
3) gain experience with the testable frameworks and the qualitative and quantitative methods scientists use to collect data;
4) develop tools to critically analyze controversial scientific issues from a life scientist's perspective;
5) acquire an understanding of the interrelationships between science, economics, ethics, and policy in environmental decision-making by society;
6) develop an understanding of how and to what extent human activities are affecting the earth's living systems.

Student Learning Objectives:

1) Students should be able to use the methods of science and knowledge derived from current scientific inquiry in life or physical science to question existing explanations.

2) Students should be able to demonstrate ways in which science influences and is influenced by complex societies, including political and moral issues.

3) Students should be able to use the methods of science, in which quantitative, analytical reasoning techniques are used.

d. Office Visits

Please *do not wait* for an insurmountable problem before considering an office visit. If you would like to discuss an issue or an assignment see me after class or schedule an office visit by contacting me at shannon.bane@sjsu.edu or 831.566.7638.

3. Course Requirements

The exams and assignments are designed to help you learn the course material and acquire the skills to analyze issues. The written assignments are designed as a mechanism for you to develop skills for evaluating, analyzing, and expressing solutions to environmental issues.

a. Class Participation

This class combines a traditional lecture format with a number of participation-based Case Studies in which students will work in groups or as a class to discuss environmental issues. Students are expected to attend and participate **fully and actively** in each class (arriving on time), complete the assigned readings **before** class, ask questions, turn assignments in on time, pick up class handouts, and **participate in class discussions**. **YOUR GRADE DEPENDS ON IT**. **If you are not present you cannot receive participation points for that day's assignment.**

b. Exams

Three exams will be given to test your understanding of the material presented in the lectures, readings, and assignments. Each exam will include the material covered since the previous exam. The exams will constitute a major portion of your grade. Please do not miss an exam. Make-up exams will be considered only for **legitimate/documented circumstances and must be arranged IN ADVANCE. NO MAKE-UP EXAMS WILL BE GIVEN AFTER THE ORIGINAL TEST HAS BEEN ADMINISTERED. EVER. DON'T EVEN ASK.**

c. Assignments

Nine assignments will be tackled this semester. Each is different, and has different requirements. Most require reading in advance, and many require research done outside of class time in the library or on the internet. Your assignments will be graded on your participation in class; ability to follow instructions; ability to work with other students; the thoughtfulness, completeness, originality, and complexity of your answers; and on spelling, punctuation, sentence structure and clarity of the written portions of your work. **All assignments MUST be typed, or they will not be graded. Again, if you are not present for the in-class portion of the assignment, you can not receive participation points for that day's assignment.**

4. Grading

Remember that I don't give out grades, you earn them. Points for each assignment and test question will be awarded to reflect the quality of your answer.

a. Assignment of Points

		Points Received
3 Exams (150 points each)	450	
9 Assignments (50 or 100 points each)	550	
Total	**1000 points**	

b. Grading Percentage Breakdown

94% and above	A
93% - 90%	A-
89% - 87%	B+
86% - 84%	B
83% - 80%	B-
79% - 77%	C+
76% - 74%	C
73% - 70%	C-
69% - 67%	D+
66% - 64%	D
63% - 60%	D-
below 60%	**F**

c. Late Assignment Policy

All assignments are due on the deadline date. I will not accept late assignments. If you do not have your assignment by the time class starts, you may turn it in that day to my box in the Environmental Studies office. It must be signed by ENVS staff or faculty as arriving on that day.

5. Reading Assignments/Course Schedule

A list of topics covered, exam and written assignment due dates, and text reading assignments are provided in the Syllabus below. The Syllabus is subject to change and any revisions to the Syllabus will be announced in class. You are responsible for keeping up with the current status of the Syllabus, so if you miss a class, please email me to see if there were any changes.

Syllabus

Date	Topics	Readings – *Essential Biology*	Assignments
W 1/23	Intro to Class; Lecture 1: Biology & Life	Ch. 1	
M 1/28	Lecture 2: Scientific Method	Ch. 1	
W 1/30	**Assignment 1: The Case of the Ivory-Billed Woodpecker**		
M 2/4	Lecture 3: Chemistry & the Origin of Life	Ch. 2 & 3	**Assignment 1 Due**
W 2/6	Lecture 4: Photosynthesis & Cellular Respiration	Ch. 6 & 7	
M 2/11	Movie: An Inconvenient Truth		
W 2/13	Movie: An Inconvenient Truth		
M 2/18	**Library Field Trip: Assignment 2**		
W 2/20	Lecture 5: DNA and Genetics **Assignment 3: The Case of the "Tainted" Taco Shells**	Ch. 4	**Assignment 2 Due**
M 2/25	**Assignment 3: The Case of the "Tainted" Taco Shells**		
W 2/27	**MIDTERM 1**		**Assignment 3 Due**
M 3/3	Lecture 6: Evolution & Natural Selection	Ch. 13	
W 3/5	**Assignment 4: I'm Looking Over a White-Striped Clover**		
M 3/10	Lecture 7: Speciation & Biodiversity	Ch 14, p. 452-461	**Assignment 4 Due**
W 3/12	Lecture 8: Extinction	Ch. 14, Assignment 5 Background Reading	
M 3/17	**Assignment 5: Threats to Biodiversity: A Case Study of Hawaiian Birds**		
W 3/19	**Assignment 5: Threats to Biodiversity: A Case Study of Hawaiian Birds**		
M 3/24	**Spring Break: No Class**		
W 3/28	**Spring Break: No Class**		
M 3/31	**Cesar Chavez Day: No Class**		
W 4/2	Lecture 9: Ecology & Ecosystem Organization	Ch. 18 & 19	
M 4/7	Lecture 10: Population & Community Interactions	Ch. 19, Assignment 6 Background Reading	**Assignment 5 Due**
W 4/9	**Assignment 6: Search for the Missing Sea Otters**		
M 4/14	**Assignment 6: Search for the Missing Sea Otters**		
W 4/16	**MIDTERM 2**		**Assignment 6 Due**
M 4/21	Lecture 11: Ecological Succession, Disturbance, and Restoration	Ch. 19, p. 443-444	
W 4/23	**Movie/Assignment 7: Cane Toads: An Unnatural History**	Assignment 8 Background Reading	
M 4/28	**Assignment 8: On a Wing and a Prayer**		**Assignment 7 Due**
W 4/30	Lecture 12: Sustainability		**Assignment 8 Due**
M 5/5	**Assignment 9: Watch Your Step**		
W 5/7	**Assignment 9: Watch Your Step**		
M 5/12	Flex-Day/Review		
W 5/21	**FINAL EXAM – 7:15am – 9:30am**	**9am class**	**Assignment 9 Due**