SJSU SAN JOSÉ STATE UNIVERSITY

College of Social Sciences · Environmental Studies

Life on a Changing Planet Section 80

ENVS 10

Spring 2024 3 Unit(s) 01/24/2024 to 05/13/2024 Modified 02/26/2024

Contact Information

Professor Darya Chehrezad: darya.chehrezad@sjsu.edu

Office: Washington Square Hall 111E

Contact me to arrange a time to meet. I am typically available on campus every Thursday from 11:45 to 1:30 and available to chat online much of the week. So, just reach out and we will figure out what works best.

Course Information

Virtual Class: Monday & Wednesday 3:00 - 4:15

Course Description and Requisites

An introduction to basic knowledge and theory in the life sciences, focusing on the theme of environmental change. Examines challenging issues in biology and methods for evaluating conflicting data and claims. Develops students' analytical and writing skills. GE Area: B2

Prerequisite: As required for Core GE courses in B2.

Letter Graded

Program Information

Welcome to this General Education course.

SJSU's General Education Program establishes a strong foundation of versatile skills, fosters curiosity about the world, promotes ethical judgment, and prepares students to engage and contribute responsibly and cooperatively in a multicultural, information-rich society. General education classes integrate areas of study and encourage progressively more complex and creative analysis, expression, and problem solving.

The General Education Program has three goals:

Goal 1: To develop students' core competencies for academic, personal, creative, and professional pursuits.
Goal 2: To enact the university's commitment to diversity, inclusion, and justice by ensuring that students have the knowledge and skills to serve and contribute to the well-being of local and global communities and the environment.
Goal 3: To offer students integrated, multidisciplinary, and innovative study in which they pose challenging questions, address complex issues, and develop cooperative and creative responses.

More information about the General Education Program Learning Outcomes (PLOs) can be found on the GE website (https://sjsu.edu/general-education/ge-requirements/overview/learning-outcomes.php).

Course Learning Outcomes (CLOs)

GE Area B2: Life Science

In Area B2 courses students develop an understanding of scientific principles and the scientific method, as well as the potential limits of scientific endeavors and the value systems and ethics associated with scientific inquiry. Life science courses develop students' understanding of the scientific method as a continuous and adaptive process of discovery and communication about the physical universe and its life forms.

GE Area B2 Learning Outcomes

Upon successful completion of an Area B2 course, students should be able to:

1. demonstrate knowledge of scientific theories, concepts, and data used in the life sciences;
2. apply scientific principles and communicate in ways appropriate to the discipline about the process and results of scientific discovery;
3. access, critically evaluate, and represent scientific information in various forms and draw appropriate conclusions;
4. use methods derived from current scientific inquiry to form evidence-based opinions about science-related matters of personal, public, and ethical concern.

Writing Practice: Students will write a minimum of 1500 words in a language and style appropriate to the discipline.

Course Materials

The book we will be using is - **Biology: The Core by Eric J Simon**.

Biology: The Core

Author: Eric J. Simon
Publisher: Pearson

Edition: Any
Price: Under $60.

We will be using this textbook throughout the semester. All of the assigned textbook readings are already in the syllabus. Feel free to find the cheapest copy you can, I found a used one (paperback) for under $60. Also, feel free to connect with other students in the class to share a book.

Grading Information

I will assess your work based on a standard grading scale (outlined below), but I want to emphasize a few key considerations. In this course, my primary focus is not solely on correctness; rather, I encourage you to engage with the material at a deeper, more personal level. My aim is for you not only to find enjoyment in the subject matter but also to comprehend the information in a way that will prove valuable throughout your academic journey and in your future endeavors.

When tackling in-class activities, group projects, write-ups, and other assignments, I highly value your perspectives on the topics under discussion. I encourage independent thinking and analysis, prioritizing your insights over an exclusive focus on correctness. Regardless of whether this is your first or last semester, use this class as an opportunity for critical reflection on the issues at hand. Don't shy away from expressing dissenting opinions—your viewpoint is as valid as any other. Environmental issues extend beyond scientific realms; they are often political, and contentious, and evoke emotional responses. By the end of this course, my goal is for you to feel at ease examining and discussing environmental matters. To achieve this, you must find and articulate your unique voice within this academic space.

Regarding participation, your final grade is largely dependent on your ability to be an active participant in this class. Participation does not simply mean speaking up during class, it can mean reaching out to me during office hours, making comments on Zoom, playing a key role when conducting group work, and essentially communicating academic interest in whatever way is most comfortable to you.

A+ (97–100), A (93–96), A- (90–92), B+ (87–89), B (83–86), B- (80–82), C+ (77–79), C (73–76), C- (70–72), D+ (67–69), D (65–66), D- (below 65).

University Policies

Per University Policy S16-9 (PDF) (http://www.sjsu.edu/senate/docs/S16-9.pdf), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the Syllabus Information (https://www.sjsu.edu/curriculum/courses/syllabus-info.php) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

Course Format

This course will be taught 100% online via Zoom, the course will have online assignments some of which will encourage you to make observations and gather information outside. All course materials, other than the book, will be made available on Canvas. You are responsible for checking Canvas regularly for announcements, assignments, and other course information and materials.

Course Overview and Description

This course is designed to provide the basic skills and knowledge necessary to engage in biological and environmental problem-solving. You will learn how to utilize the fundamentals of science to analyze complex environmental issues as well as gain the ability to interpret and critique scientific information. Additionally, you will gain the skills necessary to view the world through a critical lens and validate global environmental observations while minimizing bias.

The course materials emphasize understanding the scientific method and using the weight of scientific evidence in the analysis of conflicting data and viewpoints. Students will obtain knowledge of biological and ecological science as a basis for understanding current environmental threats and global challenges. My primary goal in this course is to give you a solid scientific foundation that will serve you in analyzing environmental issues as well as other non-environmental issues using the techniques used in scientific analysis.

Learning Outcomes

Program Learning Outcomes (Environmental Studies)

1. Students can write logical analytical papers using good writing style and construction, supported by appropriate research. Assignments will require students to understand and summarize materials in relevant scholarly/technical articles and to identify basic solutions from an interdisciplinary standpoint.
2. Students can determine, apply, and interpret appropriate basic statistical or other quantitative analyses of environmental data. Students will be able to articulate and test hypotheses and read and understand graphs and basic statistics.

Course Learning Outcomes (CLO)

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 ethical issues.
3. Students should be able to use the methods of science, in which quantitative, and analytical reasoning techniques are used, as well as be able to express themselves in proper written English.

GE Learning Outcomes (GELO)

This 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.

By the end of this class, you will all be well-versed in the scientific principles that lay at the heart of any/all environmental issues. You will specifically be able to

1. Demonstrate knowledge of scientific theories, concepts, and data used in the life sciences;
2. Apply scientific principles and communicate in ways appropriate to the discipline about the process and results of scientific discovery;
3. Access, critically evaluate, and represent scientific information in various forms and draw appropriate conclusions;
4. Use methods derived from current scientific inquiry to form evidence-based opinions about science-related matters of personal, public, and ethical concern.

Course Schedule

Week	Date	Class Topic	Readings/Video	Assignment
1	Jan. 24	Intro & Course Overview		
2	Jan. 29	Course goals, methods, schedules,	-	Canvas Discussion
	Jan. 31	Fundamentals of environmental science and interdisciplinary studies.	Read Climate Change Article (provided)	Assigned: Article Writeup (Due Feb. 5)

3	Feb. 5	Scientific Method & Scientific Papers	Read - Textbook, pp. 2-15, 16-31 Read Scientific Article (provided)	Assigned: Answer 3 questions. (Due: Feb. 12) Due: Article Writeup from 1/31
-	Feb. 7	Science Foundations for Environmental Analysis	Read - Textbook, pp. 32-43 -	-
4	Feb. 12	Genetics	Read - Textbook pp. 82-101	Due: Scientific Paper Questions from 2/5
	Feb. 14	Evolution	Read Article (provided)	Assignment: Answer 3 questions (Due Feb: 22)
5	Feb. 20	Evolution cont.	Read -Textbook pp. 158-173	-
	Feb. 22	Taxonomy & Botany	Read - Textbook pp. 174-175, 200-225	Due: Genetic Paper Questions (from 2/14)
6	Feb. 26	Ecology	Read - Textbook pp. 296-315 Watch Video (provided)	Group Work

	Feb. 28	Ecology cont.	Read Articles (provided)	Article Writeup (Due: Mar. 6)
7	Mar. 4	Environmental Biology	Read Articles & Watch Video (provided)	
	Mar. 6	Environmental Biology cont.		Due: Ecology Article Writeup (from 2/28)
8	Mar. 11	Environmental Chemistry	Read –Articles (provided) Videos (provided)	
	Mar. 13	Climate Science	Read – Textbook pp.330-331 Read - Articles	Group Work
9	Mar. 18	Climate Science cont.		Article Writeup (due Mar. 25)
	Mar. 20	Agroecology	Read – Paper Watch Video	Agroecology analysis paper (Apr. 8)
10	Mar. 25	Agroecology		Climate Article Writeup due (3/25)
	Mar. 27	Local vs. Global Environmental Science		
11	Apr. 8	Local vs. Global Environmental Science		

	Apr. 10	Field Trip	Self-Guided Field Trip	Assignment: Field Trip Report (Due: April 22)
12	Apr. 15	No Class		
	Apr. 17	Global Conflict and the Environment	Read Articles (provided)	Group Work
13	Apr. 22	Biodiversity		Due: Field Trip Report from 4/10
	Apr. 24	Sustainability	Read Textbook pp. 328-320 Read Article (provided)	
14	Apr. 29	Sustainability Cont.	Watch Video	Group Work
	May 1	Global Politics and Justice		
15	May 6	Review	Read Articles (provided	Group Work
-	May 8	Review	Read Articles (provided)	Group Work
16	May 13	Final Presentations		Group Work
-	May 15	Final Presentations		Group Work