EnvS 10 | **LIFE ON A CHANGING PLANET** | **Dr. Jeanine Pfeiffer**

Tuesdays 9:00 – 10:15 am | SAN JOSE STATE UNIVERSITY | Office: Clark Hall 414H

Classroom: DMH 347 | Spring 2007 | jmpfeiffer@ucdavis.edu

Tuesdays 10:30 – 11:45 am | Office Tel: 408/924-4780

Classroom: MH 233 | **Cellphone: 530/219-2838**

Instructor's Office Hours: Tuesdays 4:00 – 5:30 pm (or by appointment on T/R) | ENVS Office: 408/924-5450

COURSE DESCRIPTION:

In *Life on a Changing Planet* **we will engage in a sophisticated evaluation of current environmental issues using an interdisciplinary, participatory approach.** We will integrate baseline scientific concepts with current research and policy using a series of relevant case studies developed by university instructors throughout the United States. In class lectures, films, discussions, role-playing and assignments we will investigate, critique, and compare scientific findings with public policy and perceptions.

The purpose of this course is to give you, the student, the basic skills and knowledge necessary to critically examine biological and environmental issues. Living systems on our planet are in a constant state of change, both as a result of natural processes and human activities. The case studies we examine in this course will improve our understanding of life science concepts, the scientific method (as it is practiced in the lab and in the field), and the complexities involve in applying scientific concepts and research results to real-life situations.

Course topics will include:

- Human impact on ecosystems
- Cellular and microorganism biology
- Evolutionary biology and speciation
- Biodiversity and conservation biology
- Microbiology, molecular biology and genetics
- Environmental resource management
- Connections between environmental health and human health
- Habitat restoration and mitigation
- Global warming
- Biological invasions

CLASS PARTICIPATION:

THIS IS NOT YOUR TRADITIONAL LECTURE-BASED COURSE.

This course is based on the case-study method. You will be expected to participate *actively* in *every* class in small-group and all-class discussions by answering questions posed by the instructor and fellow students.

I expect punctuality, mutual respect, and professional behavior. I expect every student to have completed all relevant readings and assignments prior to showing up for each class, and to arrive prepared to discuss the readings. I expect all students to attend and participate fully and actively in every class, unless you have contacted me in advance and obtained approval for an absence or tardiness. I ask all of us to exercise courtesy, respect, and tolerance when we participate in class discussion and group assignments.

Each class will contain at least one graded study assignment ("mini-reports"), which will be scored zero ("0") if handed in late [i.e., any time other than the date and time of the relevant class section, unless approved by the instructor]. There is no makeup on in-class assignments. If you are not present you can not receive in-class participation points.

Students are strongly encouraged to consult with the instructor for guidance by email or **cellphone** (**recommended**), or during office hours at least 24 hours prior to the relevant class when any part of any assignment is unclear or especially difficult.

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:

- 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.
- Students should be able to demonstrate ways in which science influences and is influenced by complex societies, including political and moral issues.
- Students should be able to use the methods of science, in which quantitative, analytical reasoning techniques are used.

GRADING:

Grading follows a strict percentage. Points are assigned as follows:

Mini-reports	48%	=	480 points	[24 assignments worth 20 points each]
In-class work & quizzes	22%	=	220 points	[10 assignments of 10 - 20 points each]
Mid-term exam	15%	=	150 points	
Final exam	15%	=	150 points	
TOTAL			**1000 points**	

The mid-term exam covers Classes 1-16; the final exam covers Classes 17-29. Both exams are take-home exams.

Grading percentage breakdown (to calculate your grade, simply convert your total points to a percentage value):

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

On both written assignments and verbal (spontaneous) class participation, you will be graded on the **quality** of your work (e.g., the accuracy, creativity, sophistication and thoroughness of your review and analysis) – not simply on whether your answers are "right" or "wrong". Throughout the course, you will be graded on your individual progress – not against a narrowly defined standard or a class average.

REQUIRED TEXTS:

The ENVS 10 Class Reader (201 pages) is available at Maple Press, 481 E. San Carlos (between 10th & 11th).

Campbell, N. A., Reece, J. B., & Simon, E. J. (2004). *Essential biology.* San Francisco, CA: Pearson Education, Inc. (Used copies at low prices can be easily found on the internet.)

University, College & Department Policy Information:

You are responsible for understanding the policies and procedures about add/drops, academic renewal, withdrawal, etc. found at http://www2.sjsu.edu/senate/S04-12.pdf

DR. PFEIFFER'S POLICY: Deal with administrative issues EARLY to avoid registration headaches.

a) Academic integrity statement (from Office of Judicial Affairs):
"Your own commitment to learning, as evidenced by your enrollment at San José State University and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty are required to report all infractions to the Office of Judicial Affairs. The policy on academic integrity can be found at http://www2.sjsu.edu/senate/S04-12.pdf

b) Campus policy in compliance with the Americans with Disabilities Act:
"If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities register with DRC to establish a record of their disability."

DR. PFEIFFER'S POLICY: I am accustomed to facilitating the full participation of students who have special needs, or who are experiencing short-term crises. I encourage all students to communicate with me if they are experiencing difficulties with completing assignments in a timely fashion due to a serious issue.

c) Cell Phones:
Students will turn their cell phones off or put them on vibrate mode while in class. They will not answer their phones in class. Students whose phones disrupt the course and do not stop when requested by the instructor will be referred to the Judicial Affairs Officer of the University.

DR. PFEIFFER'S POLICY: All technology needs to be SILENT during class. If your cellphone – or any other electronic equipment - goes off in class, prepare to feel *acute embarrassment*.

d) Computer Use:
STANDARD POLICY: In the classroom, some faculty allow students to use computers only for class-related activities. These include activities such as taking notes on the lecture underway, following the lecture on Web-based PowerPoint slides that the instructor has posted, and finding Web sites to which the instructor directs students at the time of the lecture. Students who use their computers for other activities or who abuse the equipment in any way, at a minimum, will be asked to leave the class and will lose participation points for the day, and, at a maximum, will be referred to the Judicial Affairs Officer of the University for disrupting the course. (Such referral can lead to suspension from the University.) Students are urged to report to their instructors computer use that they regard as inappropriate (i.e., used for activities that are not class related).

DR. PFEIFFER'S POLICY: No computer use in class, unless the student has an approved learning disability requiring the computer use, or has received prior approval from me for some other reason.

Academic Honesty:
STANDARD POLICY: Faculty will make every reasonable effort to foster honest academic conduct in their courses. They will secure examinations and their answers so that students cannot have prior access to them and proctor examinations to prevent students from copying or exchanging information. They will be on the alert for plagiarism (a definition of plagiarism can be found on Judicial Affairs website at http://www2.sjsu.edu/senate/plagarismpolicies.htm. Students who are caught cheating will be reported to the Judicial Affairs Officer of the University, as prescribed by Academic Senate Policy S04-12. If you would like to include in your paper any material you have submitted, or plan to submit, for another class, note that SJSU's Academic Integrity policy S04-12 requires approval by instructors.

DR. PFEIFFER'S POLICY: Due to the way assignments are structured and graded, **it is virtually impossible to plagiarize in this course**. I will not tolerate ANY attempts to claim someone else's work or words as your own without crediting and citing the source(s). We will ALWAYS cite our sources, both written (using quotes, if appropriate, and a text/bibliographical citation) and oral (using quotes & noted as Personal Communication).

Evacuation plan for the classroom.
At the signal from the instructor, all students will exit the classroom calmly and efficiently, taking valuables with them, and exit the building through the nearest available staircase. The class will reassemble at a safe distance from the building.

ENVS 10 CLASS SCHEDULE Spring Semester 2007

Class No.	WORK DUE	DATE	CLASS TOPIC	CASE STUDY	READER PAGES
1	———	Jan. 25	Human Impacts on the Environment	Watch Your Step: Understanding the Impact of Your Personal Consumption on the Environment	1-34
2	**REPORT 1**	Jan. 30	Human Impacts on the Environment	Watch Your Step (Cont.)	35-37
3	**REPORTS 2 & 3**	Feb. 1	Cell Biology & Microbiology	Little Mito: The Story of Where He Came From; Nanobacteria	38-55
4	**REPORT 4A**	Feb. 6	Evolutionary Biology	I'm Looking Over a White-Striped Clover: A Case of Natural Selection	56-61
5	**REPORT 4B**	Feb. 8	Evolutionary Biology	I'm Looking Over a White-Striped Clover: A Case of Natural Selection (Cont.)	" "
6	**REPORT 5**	Feb. 13	Genetics	In Sickness and in Health: A Trip to the Genetic Counselor	62-69
7	**REPORT 6**	Feb. 15	Speciation	The Galapagos	70-76
8	**REPORT 7A**	Feb. 20	Biodiversity	Threats to Biodiversity: A Case Study of Hawaiian Birds	77-87
9	**REPORT 7B**	Feb. 22	Biodiversity	Threats to Biodiversity: A Case Study of Hawaiian Birds (Cont.)	" "
10	**REPORT 8**	Feb. 27	Biodiversity & Population Biology	Si El Norte Fuera el Sur: A Case Study of Squirrel Monkey Identities	88-94
11	**REPORT 9A**	Mar. 1	Genetic Engineering: GMOs	The Case of the "Tainted" Taco Shells	95-99
12	**REPORT 9B**	Mar. 6	Genetic Engineering: GMOs	Frankenfoods: The Debate over Genetically Modified Crops	100-103
13	**REPORT 10**	Mar. 8	Environmental Health	Fecal Coliforms in Antarctica	104-109
14	**REPORT 11A**	Mar. 13	Environmental Health	Kermit to Kermette: Does the Herbicide Atrazine Feminize Frogs?	110-117
15	**REPORT 11B**	Mar. 15	Environmental Health	Kermit to Kermette: Does the Herbicide Atrazine Feminize Frogs? (Cont.)	" "
16	**REPORT 12**	Mar. 20	Environmental & Human Health	Living Downstream: Atrazine & Coliform Bacteria Effects on Water Quality	118-122
	EXAM	Mar. 22	NO CLASS (Take home exam)	----------	
		Mar. 27	SPRING BREAK		
		Mar. 29	SPRING BREAK		

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Class No.	WORK DUE	DATE	CLASS TOPIC	CASE STUDY	READER PAGES
17	**REPORT 13**	Apr. 3	Environmental Health	The Fish Kill Mystery	123-129
18	**REPORT 14A**	Apr. 5	Environmental Health	Search for the Missing Sea Otters: An Ecological Detective Story	130-141
19	**REPORT 14B**	Apr. 10	Environmental Health	Search for the Missing Sea Otters: An Ecological Detective Story (Cont.)	" "
20	**REPORT 15**	Apr. 12	Environmental Resources	The Deforestation of the Amazon: A Case Study in Ecosystems and Understanding Their Value	142-160
21	**REPORT 16**	Apr. 17	Environmental Resources: Land	Oak Clearcutting: To Cut or Not to Cut?	161-163
22	**REPORT 17**	Apr. 19	Environmental Resources: Air	On a Clear Day You Can See Forever	164-172
23	**REPORT 18**	Apr. 24	Environmental Resources: Water	The River Damned: The Proposal Removal of the Snake River Dams	173-175
24	**REPORT 19**	Apr. 26	Habitat Restoration	On a Wing and a Prayer: A Wetland Mitigation Dilemma	176-180
25	**REPORT 20**	May 1	Habitat Mitigation	First in Flight, Last in Wetlands Preservation?	181-187
26	**REPORT 21**	May 3	Biological Invasions	Can Suminoe Oysters Save Chesapeake Bay?	188-190
27	**REPORT 22**	May 8	Biological Invasions	Improving on Nature?; Fear and Fishing in Lake Davis	190-193
28	**REPORT 23**	May 10	Global Issues: Global Warming	Rising Temperatures: A Case Study on the Politics of Information; The Petition: A Global Warming Case Study	194-199
29	**REPORT 24**	May 15	Global Issues: Pollutant Dispersal	PCBs in the Last Frontier: A Case Study on the Scientific Method	200-203
	EXAM	May 17	NO CLASS (Take home exam)	----------	

ADDITIONAL NOTES:

Occasionally you will be asked to perform mathematical calculations for your homework assignments. If you have forgotten, or need help with math/algebra/geometry etc., go to the free online math help site: http://www.webmath.com/