

Biology 2406 – Environmental Biology - Fall 2014
Lecture M-W-F 9:00-9:50 WSB 107 Lab W 3:30-5:30 WSB 107
Syllabus

Instructor: Dr. Chris M. Ritzi
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Text: Essential Environment: The Science Behind the Stories. 4th Edition. 2012.
Withgott, J. and M. Laposata.

Course Description: Environmental Biology is an introduction to the biological effects of human activities on the environment and possible alternatives for a more effective use of natural resources. The course emphasizes water, soil, and air pollution, as well as other current world ecological concerns. The course will consist of formal lectures, open discussions, and formalized debates over current environmental topics. The laboratory will focus on EPA Standard Methods used in field and laboratory analysis or environmental samples and other basic environmental and ecological research procedures.

Program Learning Outcomes

The graduating biology student graduating with a BS in Biology should be able to:

- 1) Demonstrate a mastery of aerobic respiration and its significance for living organisms.
- 2) Be able to identify evolution and the processes that influence it.
- 3) Be able to identify the components of cell structure and their functions.
- 4) Compare the fundamental concepts of Mendelian genetics.
- 5) Compare and contrast the process of photosynthesis to other cellular processes.
- 6) Be able to identify the processes of molecular biology.

Student Learning Objectives:

- 1) Students will identify the basic elements associated with environmental biology (species, nutrient cycles, etc.)
- 2) Students will describe the path that elements cycle through the environment.
- 3) Students compare various methods of using natural resources, and predict which ones are the best to use under various conditions.
- 4) Students will appraise their own use of environmental resources, and apply this to improving their daily impact on the environment.
- 5) Students will demonstrate a proficiency of environmental demonstration techniques, to better enable them to teach and educate others about environmental biology.

Grading: Your grade will be assigned based on the percentage of points you get out of a total possible 500 points. (100pt exams (4), 100pts Participation and Presentations)

Tests: There will be a total of 4 exams, each worth 100 points. If you miss an exam and have a legitimate excuse, contact me within 24 hours of the test and we will arrange a make-up test. If you do not contact me within 24 hours, you will receive a zero on that exam.

Attendance: Students missing 20% of lectures (9 lectures) OR labs (3 labs) may be dropped from the class per the SRSU catalog. Any student dropped for excessive absences will receive an F for the course grade. Please notify your instructor BEFORE missing class for authorized activities, death in the family, or illness. Exams missed for any reason must be made up within one week of the originally scheduled date. **REGARDLESS OF WHY AN ABSENCE OCCURS, YOU MAY BE GIVEN AN F FOR THE COURSE GRADE IF YOU ACCUMULATE SIX ABSENCES.**

Lecture courtesy: The general rules of classroom etiquette are below.

- 1) Please do not talk to others in class while the instructor is lecturing. If you have a question, ASK THE INSTRUCTOR! That's what I'm here for.
- 2) No eating, chewing, dipping, etc.
- 3) Please turn cell phones and pagers to silent while in class. They are disruptive to the entire class, and detract from learning.

Students with disabilities will be provided reasonable accommodations. If you would like to request such accommodations because of physical, mental, or learning disability, please contact the ADA Coordinator for Program Accessibility at 837-8203, FH 112.

TENTATIVE LECTURE OUTLINE

DATE	LECTURE TOPIC	CHAPTER
Aug 25	Introduction to Environmental Science	1
Aug 27	Nature of Science and Environmental Science	1
Aug 29	Environmental Ethics	1
Sept 1	Labor Day – No class	
Sept 3	Sustainability	1
Sept 5	Economics	5
Sept 8	Economics continued	5
Sept 10	Environmental Policy here and there	5
Sept 12	Environmental Policy process	5
Sept 15	Exam I	
Sept 17	Environmental Chemistry	2
Sept 19	Energy and Ecosystems	2
Sept 22	Biogeochemical Cycles	2
Sept 24	Evolution	3
Sept 26	Biodiversity	3
Sept 29	Ecological Organization	3
Oct 1	Population Ecology	3

Oct 3	Systems and Cycles	4
Oct 6	Species Interactions	4
Oct 8	Ecological Communities	4
Oct 10	Biomes	4
Oct 13	Exam II	
Oct 15	Human Population Growth	6
Oct 17	Human Population Growth	6
Oct 20	Agriculture	7
Oct 22	Agriculture	7
Oct 24	Toxicology	10
Oct 27	Waste Management	17
Oct 29	Outdoor Air Pollution	13
Oct 31	Indoor Air Pollution	13
Nov 3	Climate Change	14
Nov 5	Freshwater	12
Nov 7	Oceans	12
Nov 10	Exam III	
Nov 12	Biodiversity	8
Nov 14	Land Use – Forests and Parks	9
Nov 17	Conservation	8
Nov 19	Urbanization	18
Nov 21	Fossil Fuels	15
Nov 24	Geology	
Nov 26	Thanksgiving Holidays – No Class	
Nov 28	Thanksgiving Holidays – No Class	
Dec 1	Old Alternatives	15 & 16
Dec 3	New Alternatives	16
Dec 5	Dead Day	
Dec 10 8:00 am	Final exam for MWF 9:00	

Note – This outline is subject to change for reasons of course interest, time constraint, or instructor whim. The exams will be administered on the dates given, unless material relevant for a given exam has not been covered. Under such cases, an exam may be moved a class period or two to aid in the clarity and understanding of the material.

ENVIRONMENTAL BIOLOGY LABORATORY SCHEDULE

DATE	LABORATORY
Aug 27	No Lab
Sept 3	Introduction to Library and Internet Research
Sept 10	Environmental Politics and Policies – How-to-Activity
Sept 17	Ecosystems – Walking Field Trip on Sul Ross Hill
Sept 24	Prep for Lecture Discussions
Oct 1	Water and Biotic Sampling - Chihuahuan Desert Research Institute
Oct 8	Analysis of Water Samples
Oct 15	Prep for Lecture Discussions
Oct 22	Comparison of Alternative Building Materials
Oct 29	Soil Lab – Properties and Pollutants
Nov 5	Measuring Diversity – Use of Diversity Indices
Nov 12	Field trip to Alpine Sewage Treatment Plant
Nov 19	Thanksgiving Holiday
Nov 26	Air Pollution Lab
Dec 3	Urbanization video and discussion