

Biology 2406 – Environmental Biology - Fall 2018
Lecture M-W-F 9:00-9:50 WSB 101 Lab W 3:30-5:30 WSB 107
Syllabus

Instructor: Dr. Chris M. Ritzi

Office: Warnock Science Building - 216

Phone: 837- 8420

Email: critzi@sulross.edu

Office hours: MW 10-11, TR 11-12, T 3-5, or by appt.

Class Website: <http://sulross.blackboard.com> & <http://faculty.sulross.edu/critzi/>

Text: Essential Environment: The Science Behind the Stories. 6th Edition. 2018.
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.

Student Learning Outcomes

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

- 1) The student will be able to demonstrate an understanding of basic biological concepts, including but not limited to evolution via natural selection, cell theory, and the role and function of DNA.
- 2) The student will be able to demonstrate utilization of various field techniques toward addressing scientific questions in the specific discipline. These field techniques can include, but are not limited to, plant collection and processing, various animal collection techniques, ecological surveying and sampling, and biodiversity indexing.
- 3) The student will be able to use biological instrumentation to solve biological problems using standard observational strategies.
- 4) The student will develop writing skills by summarizing and critiquing recent relevant biological literature.

Course 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 27	Introduction to Environmental Science	1
Aug 29	Nature of Science and Environmental Science	1
Aug 31	Environmental Ethics	6
Sept 3	Labor Day – No Class	
Sept 5	Sustainability	6
Sept 7	Economics	6
Sept 10	Economics continued	6
Sept 12	Environmental Policy here and there	7
Sept 14	Environmental Policy process	7
Sept 17	Exam I	
Sept 19	Environmental Chemistry	2
Sept 21	Energy and Ecosystems	2 & 5
Sept 24	Biogeochemical Cycles	5

Sept 26	Evolution	3
Sept 28	Biodiversity	3
Oct 1	Ecological Organization	3
Oct 3	Population Ecology	3
Oct 5	Systems and Cycles	5
Oct 8	Species Interactions	4
Oct 10	Ecological Communities	4
Oct 12	Biomes	4
Oct 15	Exam II	
Oct 17	Human Population Growth	8
Oct 19	Human Population Growth	8
Oct 22	Agriculture	9 & 10
Oct 24	Agriculture	9 & 10
Oct 26	Toxicology	14
Oct 29	Waste Management	22
Oct 31	Outdoor Air Pollution	17
Nov 2	Indoor Air Pollution	17
Nov 5	Climate Change	18
Nov 7	Freshwater	15
Nov 9	Oceans	16
Nov 12	Exam III	
Nov 14	Biodiversity	11
Nov 16	Conservation	11
Nov 19	Land Use – Forests and Parks	12
Nov 21	Thanksgiving Holidays – No Class	
Nov 23	Thanksgiving Holidays – No Class	
Nov 26	Urbanization	13
Nov 28	Fossil Fuels	19
Nov 30	Minerals and Mining	23
Dec 3	Old Alternatives	20
Dec 5	New Alternatives	21
Dec 11 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 29	No Lab
Sept 5	Introduction to Library and Internet Research
Sept 12	Environmental Politics and Policies – How-to-Activity
Sept 19	Ecosystems – Walking Field Trip on Sul Ross Hill
Sept 26	Prep for Lecture Discussions
Oct 3	Water and Biotic Sampling - Chihuahuan Desert Research Institute
Oct 10	Analysis of Water Samples
Oct 17	Prep for Lecture Discussions
Oct 24	Comparison of Alternative Building Materials
Oct 31	Soil Lab – Properties and Pollutants
Nov 7	Measuring Diversity – Use of Diversity Indices
Nov 14	Field trip to Alpine Sewage Treatment Plant
Nov 21	Thanksgiving Holiday
Nov 28	Air Pollution Lab
Dec 5	Urbanization video and discussion