

**Biology 2406 – Environmental Biology - Fall 2016**  
**Lecture M-W-F 9:00-9:50 WSB 101 Lab W 3:30-5:30 WSB 107**  
**Syllabus**

**Instructor:** Dr. Chris M. Ritzi

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

**Class Website:** <http://bbsrsu/sulross.edu> & <http://faculty.sulross.edu/critzi/>

**Text:** Essential Environment: The Science Behind the Stories. 5th Edition. 2014.  
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) Demonstrate an understanding of evolution by natural selection.
- 2) Demonstrate an integration of environmental awareness into everyday modern life.
- 3) Understanding how to incorporate molecular biology into the study of the whole organism.
- 4) Demonstrate utilization of various field techniques toward addressing scientific questions in the discipline.
- 5) Conduct basic laboratory experiments utilizing standard observational strategies.

**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**

<b>DATE</b>	<b>LECTURE TOPIC</b>	<b>CHAPTER</b>
Aug 22	Introduction to Environmental Science	1
Aug 24	Nature of Science and Environmental Science	1
Aug 26	Environmental Ethics	6
Aug 29	Sustainability	6
Aug 31	Economics	6
Sept 2	Economics continued	6
Sept 5	Labor Day – No Class	
Sept 7	Environmental Policy here and there	7
Sept 9	Environmental Policy process	7
Sept 12	<b>Exam I</b>	
Sept 14	Environmental Chemistry	2
Sept 16	Energy and Ecosystems	2
Sept 19	Biogeochemical Cycles	2
Sept 21	Evolution	3
Sept 23	Biodiversity	3
Sept 26	Ecological Organization	3

Sept 28	Population Ecology	3
Sept 30	Systems and Cycles	5
Oct 3	Species Interactions	4
Oct 5	Ecological Communities	4
Oct 7	Biomes	4
Oct 10	<b>Exam II</b>	
Oct 12	Human Population Growth	8
Oct 14	Human Population Growth	8
Oct 17	Agriculture	9
Oct 19	Agriculture	9
Oct 21	Toxicology	14
Oct 24	Waste Management	22
Oct 26	Outdoor Air Pollution	17
Oct 28	Indoor Air Pollution	17
Oct 31	Climate Change	18
Nov 2	Freshwater	15
Nov 4	Oceans	16
Nov 7	<b>Exam III</b>	
Nov 9	Biodiversity	11
Nov 11	Land Use – Forests and Parks	12
Nov 14	Conservation	11
Nov 16	Urbanization	13
Nov 18	Fossil Fuels	19
Nov 21	Geology	23
Nov 23	Thanksgiving Holidays – No Class	
Nov 25	Thanksgiving Holidays – No Class	
Nov 28	Old Alternatives	20
Nov 30	New Alternatives	21
Dec 2	Dead Day	
<b>Dec 6 8:00 am Final exam for MWF 9:00</b>		

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 24	No Lab
Aug 31	Introduction to Library and Internet Research
Sept 7	Environmental Politics and Policies – How-to-Activity
Sept 14	Ecosystems – Walking Field Trip on Sul Ross Hill
Sept 21	Prep for Lecture Discussions
Sept 28	Water and Biotic Sampling - Chihuahuan Desert Research Institute
Oct 5	Analysis of Water Samples
Oct 12	Prep for Lecture Discussions
Oct 19	Comparison of Alternative Building Materials
Oct 26	Soil Lab – Properties and Pollutants
Nov 2	Measuring Diversity – Use of Diversity Indices
Nov 9	Field trip to Alpine Sewage Treatment Plant
Nov 16	Air Pollution Lab
Nov 23	Thanksgiving Holiday
Nov 30	Urbanization video and discussion

for  
20  
people