

Instructor: Dr. Stephen Richter
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Office: SB 3106
Office hours: Tuesday 2:00-4:30 or by appointment

Office phone: 622-8688

Course Description: Prerequisite: BIO 102 or equivalent and one of the following: GLY 102, CHE 100 or PHY 102 or equivalents. This course introduces pre-service/in-service teachers to ecology and the environment through an interdisciplinary approach beginning with the physical environment progressing to whole ecosystems and onto analyses of environmental issues. Classroom strategies and techniques will be modeled.

Textbook: The textbook is online and available at no cost: <http://www.eoearth.org/view/article/151935/>.

Student Learning Outcomes:

The students will

1. Demonstrate an understanding of core concepts taught through experiential learning (i.e., trips to the field, indoor and outdoor activities, and group discussions) by explaining
 - a. Ecosystems
 - b. Dynamics of organisms, populations, and communities within ecosystems
 - c. Abiotic and limiting factors of ecosystems
 - d. Energy flow and biogeochemical cycling through ecosystems
 - e. Biodiversity and the role it plays in a healthy ecosystem.
 - f. Process of evolution and how it leads to the diversity of life
 - g. Global climate and factors that influence it
 - h. Dynamics of human populations and the role of human beings and how human activities alter ecosystem dynamics
 - i. Sustainability: energy use issues, natural resources and ecosystem services, waste and environmental quality, and use of science and technology for solving local, national, and global issues.
2. Practice science to increase understanding of process and ability to use it in their future classrooms by designing and conducting independent environmental investigations.
3. Demonstrate effective environmental science teaching strategies to be used in their future classrooms by developing teaching strategies (BIO 590 only) or ecological resource files (BIO 790 only).

Course Information: I will use Blackboard to post supplementary course information, grades, etc. I will also send out periodic e-mails via Blackboard, so if you typically use an e-mail address other than your ECU account, you will need to check your university account or have it forwarded to your other account.

Course Requirements:

1. Readings on ecological and environmental issues and ethics.
2. Environmental investigation report and presentation: Students will plan and implement an environmental investigation on a course-related topic including appropriate data analysis. They will report their findings through a written report as well as a class presentation. A scoring guide will be provided.
3. Written exams: Students will complete a traditional midterm and final examination.
4. Field/lab Journal: Daily class notes and activities will be recorded in a journal.
5. **BIO 590 only, Teaching Strategy Project:** Students will plan a series of related lessons on an ecological topic. A scoring guide will be provided.
6. **BIO 790 only, Ecological Activity File:** After evaluating a variety of materials, students will compile an activity file targeting a particular ecological topic and grade level. A scoring guide will be provided.

Attendance: Daily attendance is required. **Absences equating in 20% of the class meetings will result in automatic failure.** Chronic tardiness will be considered the same as being absent. The student is responsible for presenting adequate reason for absence to the instructor in order to be given opportunity to make up missed work. Adequate reasons include personal illness, death or serious illness in the immediate family or participation in an approved University activity. If you have an unexcused absence when homework or other assignment is due, it will not be accepted. If you have an excused absence, materials are due via email on due date or during the next class.

Grading of Course Requirements

1. Homework	100 points
2. Environmental investigation report and presentation	125 points
3. Written exams	200 points
4. Teaching strategy project or Ecological activity file	75 points
5. Journal	<u>50 points</u>
Total	550 points

The course grade will be based on an accumulation of points on course requirements. Grade equivalent for accumulated points are as follows:

Undergraduates:	90-100% = A; 80- 89% = B; 70-79% = C; 60-69% = D, <60 = F
Graduates:	92-100% = A; 83- 91% = B; 74-82% = C; 65-73% = D, <65 = F

Student Progress: The instructor will provide students with written information on their progress in the course at least once prior to the mid-point of the course through feedback on learning tasks.

Make-up Exams: Make-up exams will be given only to students who have made previous arrangements with me or who present an adequate and documented reason for absence. Excused absences are listed in the EKU Student Handbook and include “circumstances beyond the student's control, such as personal illness, critical illness or death in the immediate family, or participation in an approved University activity.”

UNIVERSITY LEVEL POLICIES

Notification of the Last Day to Drop the Course

The last day to drop the course is just prior to the mid-point of the course. <http://colonelscompass.eku.edu>

Accessibility Accommodation Statement:

Eastern Kentucky University strives to make all learning experiences as accessible as possible. Students registered with the Center for Student Accessibility (CSA), should request accommodation letters from the CSA office. The Center for Student Accessibility will email your academic adjustment letter to you, or you may stop by the office for a hard copy. You will provide your letter to the course instructor(s) immediately. We strongly recommend that you discuss the accommodations need with your instructor(s). Students, who need an accommodation for a documented medical, mental health, or learning difference, may register online at accessibility.eku.edu/applying-services, or if you have questions, you may email the CSA office at accessibility@eku.edu or telephone at (859) 622-2933. The Americans with Disabilities Amendments Act (ADAAA) does not consider pregnancy a disability. Students needing accommodations due to pregnancy should contact EKU's Office of Equity and Inclusion, (859) 622-8020.

Academic Integrity Policy

Students are advised that EKU's Academic Integrity policy will be strictly enforced in this course. The Academic Integrity policy is available at <http://studentrights.eku.edu/academic-integrity-policy>. Questions regarding the policy may be directed to the Office of Academic Integrity located in the Turley House, or contact them by phone at (859) 622-1500.

Official Email

An official EKU e-mail is established for each registered student, each faculty member and each staff member. All university communications sent via e-mail will be sent to this EKU e-mail address.

Class Rules

- ✓ Be productive
- ✓ Be prepared
- ✓ Be polite

Fall 2019 Schedule

DATE	TOPIC
8/22	-Course Overview -Science & Inquiry -What is an Ecosystem?
8/29	-Energy Flow -Science -Next Generation Science Standards
9/5	-Abiotic Components of Ecosystems -Biotic Components of Ecosystems
9/12	Field Trip to Maywoods Environmental and Educational Laboratory -Water Quality and Aquatic Ecosystems
9/19	-Terrestrial Ecosystems and Ecosystem Dynamics <i>-Environmental Investigation proposals due</i>
9/26	Field Trip to Glenn Marshall Elementary outdoor classroom -Wetlands and Outdoor Education
10/3	-Biodiversity
10/10	Field Trip to Taylor Fork Ecological Area <i>-Midterm Exam</i> -Ecological Succession
10/17	-Biodiversity
10/24	Field Trip to Elmwood -Species Interactions and Evolution
10/31	-Evolution & Extinction <i>Lesson Plans due</i>
11/7	-Population Biology
11/14	-Human Population Biology and Ecology -Human Connections to Ecosystems
11/21	-Biogeochemical Cycles: Carbon -Global Climate Change, and Where Do We Go from Here?
11/28	<i>-Thanksgiving Holiday</i>
12/5	-Environmental Investigation Presentations
12/10	-TUESDAY Final 1:30–3:00 PM