Ecosystem Ecology
Biology 5490
Fall Semester, 2019

Instructor: Dave Bowling
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Office hours: M 3:00-4:30 pm, Th 9:30-10:30, or by appt.

Teaching Assistant: Julia Yang, email: julia.yang@utah.edu
Office Hours ASB 442, T 1:00-2:30, W 11:30-1:00

Location and Time: JTB 320, M-W, 1:25-2:45pm

Textbook (required):

Other useful texts (not required):

Course Description: This lecture course for upper division and graduate students will examine the biological, physical, and chemical factors that control cycling of elements such as carbon, nitrogen, and phosphorus within terrestrial ecosystems. Elemental cycles are a critical component of ecosystem function and vital to the stability of ecosystem processes. Topics will include the climate system, energy and water balance of ecosystems, ecosystem productivity, decomposition, carbon and nutrient cycling, soil chemistry, trophic relations, aquatic ecology, succession, disturbance, and fire ecology, land use change, and global biogeochemical cycles.

Course Objectives and Learning Outcomes: Each student will understand and be able to explain the general principles of ecosystem ecology, and why they are important for society. Students will understand the scientific basis for many of the environmental issues that society faces.

Course Prerequisites: This is an interdisciplinary class and there are students who are not Biology majors.
Required: CHEM 1220 or CHEM 1221 (Introductory Chemistry)
Recommended (prior or concurrent):
BIOL 1210 Principles of Biology
BIOL 3510 or CHEM 3510 (Biochemistry)
PHYS 2010, 2210, or 3210 (Introductory Physics)
Exams: There will be 4 exams. These will consist of short answer and short essay questions, and you will be asked to draw diagrams of relevant processes. Some exam questions will be designed to encourage you to think critically about a topic, expecting you to build on concepts taught in class. No makeup exams will be given. If a true emergency prevents you from attending an exam, contact the professor as soon as possible with written, verifiable documentation and we’ll try to work something out. No calculators or phones are allowed for exams.

Discussion Homework: There will be a total of 5 assignments involving contemporary ecosystem science topics (see schedule for topics). These will involve guided reading of the scientific literature and evaluating the topics in a critical thinking context. A written assignment (to be completed individually) will help to solidify your understanding, and during the same or next class period we will have an interactive discussion about the topic. Written assignments will be due in pdf format via Canvas, at midnight on the day prior to the discussion (see schedule).
**Grading:** Grades will be assigned in the usual fashion (90-100 A, 80-89 B, 70-79 C, 60-69 D, 0-59 F) weighted as follows:

- **Exams:** 72 % (18 % each)
- **Discussion Homework:** 26 % (5.2 % each)
- **Participation:** 2 %

This is a discussion-oriented class and we want you to be involved! You should participate fully in class, asking and answering questions, and generally promoting our collective learning experience. If you always participate your grade and our experience will benefit.

**Canvas:** Electronic (PDF) copies of all handouts from class, readings, exams, and exam keys will be made available via Canvas.

**Attendance and lecture notes:** Come to class! You are expected to attend all lectures, and you are responsible for taking your own notes during lecture. If you skip a lecture, obtain lecture notes from a fellow student in the class. Lecture notes will not be provided by the professor or teaching assistant if you skipped class. Handouts are available via Canvas.

**Reading:** Readings from the textbook or other sources are assigned for each of the lecture topics. To get the most out of lecture, you should always read the assigned material before class. We can’t possibly cover all the material in the book in class – if you want to learn about Ecosystem Ecology (and if you want to do well in this class) you need to read the book!

**Professor and TA office hours:** We will set aside several hours each week to meet with you to discuss concepts from class or anything else. Take advantage of this time. Don’t be intimidated or afraid to ask questions – we are here to help and we want you to come to us with your questions. We’ll meet with you individually, in groups, whatever. If you come outside regular office hours, we will probably ask you to come back another time (we have responsibilities beyond teaching this class). We’re happy to make an appointment if you need one.

**Regrade request policy:** Questions regarding grading will be considered only if received in writing within one week of the day on which materials are returned in class (give to the TA). Don’t wait until the semester ends or you will be disappointed when we turn you down.

**Cell phones and other electronic devices:** Be respectful of your fellow students and turn your phone off before class. Students who use a cell phone in class (except during breaks) will be asked to leave. Other devices may be used for educational purposes (for example if you take notes electronically) as long as you don’t disrupt the learning environment for others. This policy will be strictly enforced.
Diversity: We value diversity in nature and in the learning environment. We expect all participants in the course to treat each other with respect and value the differences among us. Please communicate with us if there is anything we should know to enhance the effectiveness of your learning in this course.

The Americans with Disabilities Act. The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

University Safety Statement. The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

Addressing Sexual Misconduct. Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expressions) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran’s status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677 (COPS).

Academic Conduct:
In order to ensure that the highest standards of academic conduct are promoted and supported at the University, students must adhere to generally accepted standards of academic honesty. Acts of academic misconduct include cheating, plagiarizing, research misconduct, misrepresenting one's work, and inappropriately collaborating. Suspected cases of academic misconduct are dealt with according to the rules found in the Student Code, University Policy 6-400:
http://regulations.utah.edu/academics/6-400.php

“Offensive material” statement:
This instructor does not grant accommodations to course content. Please review the syllabus carefully to see if the course is one that you are committed to taking.