Bio 373 Ecology
Summer 2020
Syllabus

Instructor

Dr. Laura I. Gonzalez
Email: ligg@austin.utexas.edu
Office hours: M/W 1-2:30 pm and by appointment
Where: on line through Canvas Zoom

Time & Place

Lecture: M,T,W,TH,F 9:00-10:30 am online through Canvas Zoom

Discussion: 84408 T, TH 2:00-3:30 pm
84409 T, TH 3:30-5:00 pm
both online through Canvas Zoom

Teaching Assistants

Course description

An introduction to ecology, the study of relationships among organisms and between organisms and their environment; adaptations, population, communities, and ecosystems. Includes both plants and animals and both terrestrial and aquatic ecosystems. Prerequisite: Biology 325 or 325H with a grade of at least C-.

Rationale

Ecology is one of the upper-division courses available to fulfill a BS or BA in Biology.

Course Goals

Goal 1: Realize that events in the natural world are interconnected.
Goal 2: Understand that interactions in the natural world are governed by physical and biological principles.
Goal 3: Realize that ecological interactions are simultaneously influenced by processes acting at multiple temporal and spatial scales.
Goal 4: Appreciate that humans are a component of the natural world.
Goal 5: Realize that scientists use several approaches to study connections in nature.
Goal 6: Hone your observational, critical thinking, and communication skills while developing an ecological inquiry

Course learning objectives

By the end of this course you should be able to:

1. *Distinguish the different types of ecological systems found in nature*
2. *Explain how interactions between biological entities and their environment can affect other biological entities and potentially lead to unexpected consequences.*
3. *Explain how much energy and matter enter and move through ecological systems.*
4. *Compare how dynamic steady states are maintained and regulated in some ecological systems but not in others.*
5. *Explain how evolution opens up new interacting possibilities in ecological systems.*
6. *Explain how patterns and processes at each level of ecological organization are intrinsically linked in a web of cause and effect with those occurring at different levels.*
7. *Outline how humans have virtually affected all ecological systems on Earth.*
8. *Compare the advantages and disadvantages of using mensurative or manipulative experiments across, field, lab, mathematical and simulation settings to test ecological working hypothesis.*
9. *Identify a pattern in nature and develop a working hypothesis to explain it.*

Format

Lecture: During lecture we will discuss the fundamental principles in Ecology, and work towards the assessment of your knowledge. In-class activities and exercises will be implemented during lecture. Lecture assignments will be given as homework at the end of each lecture to help you better learn the course material. The lecture assignments will provide extra credit for your final course grade. Weekly quizzes will be posted in Canvas each F (last one on TH) at the beginning of lecture time.

Discussion: During discussion you will have a Q & A session about the lecture material using the questions you will submit in the Canvas discussion. You will also do some practice exercises to help you understand difficult aspects of the lecture material.

Assignments, assessment, and evaluation

Preliminary information on assignments and evaluations:

a. **Weekly quizzes:** there will be one practice quiz and 5 official quizzes. The quizzes will focus on lecture material presented during the week. Quizzes will be done through Canvas. Each student will receive a unique quiz. Quizzes will be open book BUT NOT open to collaboration with peers. Quizzes will consist of 16 multiple answer multiple choice and 4 brief/short answer questions.
b. **Lecture assignments:** include short exercises and questions. These individual assignments will be evaluated as participation and will count as extra credit towards your final grade. They will be submitted via Canvas. The lowest *2* lecture assignments will be dropped.

c. **Discussion attendance and assignments:** attendance is required for discussion; you can make either of the two scheduled times on T and TH, but must attend one each day. There will be ~ 9 discussion activities. These activities will help you understand difficult course content. Detailed instructions will be provided in Canvas. The lowest 1 will be dropped.
d. **Self-guided field trip:** a self-guided field trip will be assigned at the beginning of the course. Detailed instructions on the assignment will be provided in Canvas.
e. **Final exam:** there will be no final exam in this course.

How to do well in this course

1. Download slides and learning objectives
2. Attend Zoom lecture meetings
3. Take good notes during the meetings
4. Submit content questions for discussion
5. Attend and participate in Zoom discussions
6. Dedicate at least 1.5 hours per day to study the learning objectives while using your book and slides
7. Come to virtual office hours often with any questions you may have about the learning objectives
8. Prepare each week for your quizzes (if you do 6 above you should be prepared)
9. Do a good job on your self-guided field trip

Grading Procedures

Weekly quizzes	=	65%
Discussion attendance and assignments	=	20%
Self-guided field trip	=	15%
Lecture assignments (Extra Credit)	=	2%
Total	=	102%

Grade breakpoints: Grades will be assigned as follows: A: 93-100%; A-: 90-92.9%; B+: 87-89.9%; B: 83-86.9%; B-: 80-82.9%; C+: 77-79.9%; C: 73-76.9%; C-: 70-72.9%; D+: 67-69.9; D: 63-66.9%; D-: 60-62.9; F: 0-59.9.

Tentative Course Schedule

Lecture/discussion topics, readings and assignments are shown in the following table with their corresponding schedule and due dates. ***The lecture schedule and assignment due dates may change, so please keep up to speed with the course.*** We will post announcements/changes on Canvas as needed.

Week	***Date***	***Lecture Topic***	***Required Readings AFTER lecture***	***Weekly Discussion Activities***	***Assignments (Due date)***
1	4 Jun	What is Ecology?	Syllabus and Ch 1:	No discussion	

			2-17		
	5 Jun	No lecture: Self-guided field trip			
2	8 Jun	The Physical environment I	Ch 2: 22-37		Quiz 1 extra credit: Getting to know you (6/8)
	9 Jun	The Physical environment II	Ch 2: 39-46	Q & A Session	Practice quiz
	10 Jun	The Biosphere	Ch 3: 49-53, 58-60, 62-64, 69-72		
	11 Jun	Coping with environmental variation: temperature	Ch 4: 83-97	Q & A Session	
	12 Jun	**Quiz 1**			
3	15 Jun	Coping with environmental variation: water	Ch 4: 98-105		
	16 Jun	Population distribution and abundance	Ch 9: 206-219	Q & A Session	
	17 Jun	Exponential population growth	Ch 11: 247-252		
	18 Jun	Population regulation	Ch 11: 252-258; Ch 10: 235-237	Q & A Session	
	19 Jun	**Quiz 2**			Self-guided field trip (6/21)
4	22 Jun	Population dynamics	Ch 10: 228-235; 237-243		
	23 Jun	Spatial population dynamics	Ch 9: 219-222	Q & A Session	
	24 Jun	Predation	Ch 12: 270-279; 283-286		
	25 Jun	Parasitism	Ch 13: 292-300; 303-307	Q & A Session	
	26 Jun	**Quiz 3**			
5	29 Jun	Competition	Ch 14: 314-327		
	30 Jun	The nature of communities	Ch 16	Q & A Session	
	1 July	Change in communities	Ch 17 (skip pp 384-387)		
	2 July	Species diversity in communities	Ch 19 (use learning objectives as guide)	Q & A Session	
	3 July	**Quiz 4**			
6	6 July	Production & Energy Flow	Ch 20 (446-461) Ch 21 (468-481)		Self-guided field trip revision (7/6)
	7 July	Nutrient supply and cycling	Ch 22 (except concept 502-504)	Q & A Session	
	8 July	Global ecology	Ch 25 (566-586)		
	9 July	**Quiz 5**		No discussion	

Course Procedures

Class behavior, attendance, and participation policy:

1. Expected behavior: to make our time together as valuable as possible, we all have to work hard at it. The following two basic principles provide some guidelines: **I) Every student has the right to learn as well as the responsibility not to deprive others of their right to learn. II) Every student**

is accountable for his or her actions. In order for you to get the most of this class, please consider the following:

a. **Attend all scheduled lectures and discussions and arrive on time.** Late arrivals and early departures are disruptive and violate the first basic principle listed above. Lecture attendance will provide you the first exposure to the material being covered in the course. Lectures and discussions will be recorded. Try to get in the habit of attending the lectures. *Lecture attendance is not required but is highly recommended*. *Discussion attendance is required.*

2. **In-class participation is highly sought after during the course.** We want you to feel free to express your opinions, arguments or questions about the material being presented. You will be able to unmute your microphone or use the chat feature in Zoom. We will also use Zoom poll to communicate.

3. **Policy concerning make-ups:** there are no make-up quizzes, assignments or other evaluations unless a justified reason per UT policy or a documentable emergency occurs. A documentable emergency needs to be communicated through the Student Emergency Services. **You need to contact your instructor immediately for documentable emergencies and two weeks before being absent for a justified absence**.

Course Readings/Materials:

1. Text: Bowman W. D. and S. D. Hacker. 2020. ***Ecology*** 5th Edition (ISBN: 9781605359212) is *required* for the course. Please get the e-book version at https://www.redshelf.com/book/1521153/ecology-1521153-9781605359236-william-d-bowman-sally-d-hacker or https://www.vitalsource.com/products/ecology-william-d-bowman-sally-d-v9781605359236 You are responsible of reading the assigned chapter/pages ***after*** each lecture. This will reinforce your learning of the material discussed during lecture, prepare you for the quizzes and help you realize what you do not understand and submit questions for discussion.

2. For those students interested in pursuing a professional career in Ecology or a related field I highly recommend getting a copy of Gotelli's ***A Primer of Ecology*** (ISBN 0878932739) and Levin's ***The Princeton Guide to Ecology*** (ISBN: 9780691128399) for your personal library. The first book covers at length the mathematical models we will be dealing with during population ecology section of the course. The second one is a major compilation of the fundamental concepts and recent advances in the field of Ecology.
3. I recommend joining the Ecolog-List Serv if you are thinking of pursuing a career in Ecology. Here you will find information about training and education opportunities, jobs, grants, interesting discussion and more. To subscribe check the following website https://www.esa.org/membership/ecolog/

4. If you are interested in learning and being active on biodiversity issues check the UT Biodiversity Center here: https://biodiversity.utexas.edu/ Make sure to check their biodiversity blogs and subscribe to their newsletter.

5. Zoom lecture recordings/learning objectives/power point presentations/lecture assignments keys will be posted in Canvas. The zoom lecture recordings are designed to supplement your learning. A series of learning objectives will be posted in canvas under modules before each lecture. The learning objectives will guide your course readings and will provide a road map of what you need to know to do well in your quizzes. **Always use the learning objectives to prepare for your quizzes. Lecture power points and learning objectives will be posted in Canvas under modules *before* each lecture.**

Use of Canvas

In this class I use Canvas to distribute lecture materials, to communicate, to collaborate online, to post grades, and to submit assignments. You can find support for Canvas at ITS Help Desk at 475-9400 or you can check the student tutorial here: https://utexas.instructure.com/courses/633028/pages/student-tutorials. You will submit your assignments through Canvas. *Please learn how to correctly submit assignments in Canvas.*

Use of Piazza

This term we will be using Piazza for rapid class communication. The system is highly catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. Our class Piazza page can be accessed directly on Canvas or via the link below. If you haven't used Piazza before, please check out their student support page - this page has step-by-step guides to help with posting, replies, private messaging, and more.

Piazza class page: https://piazza.com/utexas/summer2020/bio373/home
Support page: https://support.piazza.com/support/solutions/folders/48000404468

Use of email

When *emailing instructors, please use a subject line*. The subject should begin with BIO 373: and include an informative statement about the topic of your email. For example, BIO 373: Question about lecture 8. You also must include your name in the body of your email. This will help us prioritize your messages from all the other correspondence received. We will attempt to answer all email in a timely manner. Be aware that some email may trigger spam filters and therefore not get delivered. Check with the instructor if you do not receive a reply.

Use of Class Materials

The materials used in this class, including, but not limited to quizzes, and homework assignments are copyright protected works. Any unauthorized copying of the class materials is a violation of federal law and may result in disciplinary

actions being taken against the student. Additionally, the sharing of class materials without the specific, express approval of the instructor may be a violation of the University's Student Honor Code and an act of academic dishonesty, which could result in further disciplinary action. This includes, among other things, uploading class materials to websites for the purpose of sharing those materials with other current or future students.

University Notices and Policies

Special accommodations
As per University policy, you must inform the instructor of any special concerns by the 12th class day. Special concerns include University excused absences and special accommodations in-class and during evaluations.

Academic misconduct: We expect you to behave with integrity and to follow University policies regarding academic honesty. Scholastic dishonesty on any quiz or assignment will result in a failing grade (F) which you may not drop, and will be reported to the Dean of Students.

Q drop: The State of Texas has enacted a law that limits the number of course drops for academic reasons to six, please try to think clearly whether dropping this or any other course is wise after the official date.

Title IX Reporting
Title IX is a federal law that protects against sex and gender-based discrimination, sexual harassment, sexual assault, sexual misconduct, dating/domestic violence and stalking at federally funded educational institutions. UT Austin is committed to fostering a learning and working environment free from discrimination in all its forms. When sexual misconduct occurs in our community, the university can: 1. Intervene to prevent harmful behavior from continuing or escalating. 2. Provide support and remedies to students and employees who have experienced harm or have become involved in a Title IX investigation. 3. Investigate and discipline violations of the university's relevant policies. Beginning January 1, 2020, Texas Senate Bill 212 requires all employees of Texas universities, including faculty, report any information to the Title IX Office regarding sexual harassment, sexual assault, dating violence and stalking that is disclosed to them. Texas law requires that all employees who witness or receive any information of this type (including, but not limited to, writing assignments, class discussions, or one-on-one conversations) must be reported. **I am a Responsible Employee and must report any Title IX related incidents that are disclosed in writing, discussion, or one-on-one. Before talking with me, or with any faculty or staff member about a Title IX related incident, be sure to ask whether they are a responsible employee. If you would like to speak with someone who can provide support or remedies without making an official report to the university, please email advocate@austin.utexas.edu.** For more information about reporting options and resources, visithttp://www.titleix.utexas.edu, contact the Title IX Office via email at titleix@austin.utexas.edu, or call 512-471-0419. **Although graduate teaching and research assistants are not subject to Texas Senate Bill 212, they are still mandatory reporters under Federal Title IX laws and are required to report a wide**

range of behaviors we refer to as sexual misconduct, including the types of sexual misconduct covered under Texas Senate Bill 212. The Title IX office has developed supportive ways to respond to a survivor and compiled campus resources to support survivors.

Important Dates

Jun 5th: last day to officially add/drop a course
Jun 9th: last day to drop a course for possible refund
Jun 24th: last day to change to or from pass/fail or credit/no credit basis
July 9th: last day to withdraw/drop a course with approval
July 9th: last class day

WELCOME TO BIO 373! We are looking forward to meeting you, teaching you and learning from you.