Course title and number   RENR 205
Term                     Fall/Spring
Meeting times and location Section 501: MWF 09:10 am -10:00am: ILSB 1105
                              Section 502: MWF 01:50 pm-02:40pm: ARCB 101

Course Description and Prerequisites

Principles of ecology using a holistic approach treating plants, animals and humans as one integrated whole; composition, structure, nutrient cycles and energetics of biotic communities; adaptations to environmental factors; biotic relationships; and problems of environmental quality and resource use.

Prerequisites: None

Learning Outcomes or Course Objectives

1. The primary objective of this course is to explore ecology, its applications, and ecological inquiry. As a result of taking this course you should be able to:

   1. explain and distinguish between basic ecological concepts related to:
      a. effects of environmental factors on organisms and adaptations of organisms to their environment
      b. structure and dynamics of populations and communities and the role of disturbances
      c. structure of ecosystems including energy flow dynamics and nutrient cycling
      d. landscape pattern and process, and their interactions
      e. characteristics of major ecosystems and factors determining their spatial distributions

   2. use ecological concepts and principles to interpret and critique current issues in environmental management and natural resource conservation

   3. explain the scientific inquiry process and conduct simple ecological inquiries

Instructor Information

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Contact via eLearning
Office hours: Fri. 10:30am-12:30pm, or by appointment, 103E Animal Industries Bldg. Annex

Textbook and/or Resource Material


Weekly reading needs to be completed before class and there will be a closed-book clicker quiz for the readings in each class.

Clicker
You are required to purchase an i>clcker2 remote for in-class quizzes and activities. i>clcker is a response system that allows you to respond to questions we pose during class, and you will be graded on your i>clcker2 responses. You must register your i>clcker2 remote online before Sep 5th. You must have voted in class on at least one question in order to complete this registration properly. Once you have voted on a question in our class, go to http://www.iclicker.com/registration. Complete the fields with your first name, last name, student ID, and remote ID. The remote ID is the series of numbers and sometimes letters found on the bottom of the back of your i>clcker2 remote. You are responsible to make sure that your clicker is functional and with power in every class period.

Grading Policies

(≥90% A, 80-89% B, 70-79% C, 60-69% D, and <60% F)
Weekly on-line quizzes 100 points
Ir-class clicker questions 100 points
4 unit exams (@100 points each) 400 points
Irquiry project and peer review 100 points
Total: 700 points

Attendance Policy

“The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/rule07.”

Lecture Outline

UNIT I

Week 1   Introduction to course
Chapter 1: Introduction
Chapter 2: Adaptations to the Physical Environment: Water and Nutrients

Week 2   Chapter 3: Adaptations to the Physical Environment: Light, Energy, & Heat
(Sep 3) Chapter 4: Variation in the Environment

Week 3
(Sep 10) Part II – Organisms
Chapter 6: Evolution and Adaptation
Chapter 7: Life Histories and Evolutionary Fitness
Chapter 8: Sex and Evolution

Week 4
(Sep 17) Chapter 9: Family Society, and Evolution
Review (Sep 19)
Exam I (Sep 21)

UNIT II

Week 5
(Sep 24) Part III – Populations
Chapter 10: The Distribution and Spatial Structure of Populations
Chapter 11: Population Growth and Regulation
Chapter 12: Temporal and Spatial Dynamics of Populations

Week 6
(Oct 1) Chapter 13: Population Genetics
Part IV – Species Interactions
Chapter 14: Species Interactions
Chapter 15: Dynamics of Consumer-Resource Interactions

Week 7
(Oct 8) Chapter 16: Competition
Chapter 5: The Biome Concept in Ecology
Review (Oct 12)

UNIT III

Week 8
(Oct 15) Exam II (Oct 15)
Part V – Communities
Chapter 18 Community Structure
Inquiry project

Week 9
(Oct 22) Chapter 19 Ecological Succession and Community Development
Online Lecture: Disturbance and Fire Ecology
Inquiry project

Week 10
(Oct 29) Chapter 20 Biodiversity
Chapter 21 History, Biogeography, and Biodiversity
Inquiry project

Week 11
(Nov 5) Part VI – Ecosystems
Chapter 22 Energy in the Ecosystem
Review (Nov 7)
Exam III (Nov 9)
Inquiry project

UNIT IV

Week 12
(Nov 12) Chapter 23 Pathways of Elements in Ecosystems
Chapter 24 Nutrient Regeneration in Terrestrial and Aquatic Ecosystems
Inquiry project
Week 13  Part VII – Ecological Applications  
(Nov 19) Chapter 25 Landscape Ecology  
Inquiry project  
Thanksgiving holiday – No class on Nov 23

Week 14  Chapter 26 Biodiversity, Extinction, and Conservation  
(Nov 26) Chapter 27 Economic Development and Global Ecology

Week 15  Review (Dec 3)  
(Dec 3) Reading days (Dec 5-6)

Week 16  Exam IV for Section 501 (Dec 10, 8:00-10:00am)

In-Class Clicker Quizzes and Activities
There will be two kinds of clicker questions: closed-book clicker quizzes in class over the reading assignments; and open book questions for learning activities. The purpose of the clicker quizzes is to assess your understanding of the reading material and to guide classroom activities to improve your understanding.

For each class, the total points for clicker questions will be 5, of which 2 are participation points and 3 are based on performance in the clicker quiz questions. Participating in 50% or more of the clicker questions is required to obtain participation points in each class.

At the end of the semester, the lowest 20% of the clicker grades will be discarded, and the rest will be averaged. There will be no make-ups or adjustments for clicker quizzes or participation, except for situations with university excused absences.

On-line Quizzes
Weekly online quizzes will be given in eLearning, each with about 10-15 questions based on readings, lectures and assignments during the preceding week. Each quiz can be taken twice within the allowed time period; the higher of the two scores will be used. A portion of the exam questions will come from the quiz questions. Each quiz will begin at 5:00 am on Saturday and will be available until 5:00 am on the following Saturday. At the end of the semester, the lowest grade will be dropped and others will be averaged.

Inquiry Project
An inquiry project will be conducted during the second half of the semester. Each student will conduct an individual inquiry project that involves the full process of ecological inquiry – developing research hypothesis based on observations and published knowledge on the ecological phenomena, design and conduct sampling to collect data, analyze and interpret the data to test the hypothesis, writing a scientific report based on the investigation, participate in peer review of the reports, and improve one’s report based on peer review feedback. Specific directions for the inquiry project will be provided in eLearning.

Exams
There will be 4 unit exams each consisting of 40 multiple choice questions worth 2.5 points each. Exams will be scantron graded; students must provide their own full page scantrons (NCS mp90051 or 0-101607-TAMU). For all exams, please bring your valid student ID card and a No. 2 lead pencil with an eraser. No other materials (notebooks, etc.) will be allowed in the room during exams. No personal electronic devices may be used during the exams.

Make-up Policy
A make-up exam will be given for students with a University-excused absence (http://student-rules.tamu.edu/rule07) for a unit exam. If physically able, you must register your excused absences with
course instructors within 5 days of the missed exam, quiz or assignment.

Americans with Disabilities Act (ADA)
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit http://disability.tamu.edu

Academic Integrity

"An Aggie does not lie, cheat, or steal, or tolerate those who do."
Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

For additional information please visit: http://aggiehonor.tamu.edu