Draft
SYLLABUS
UTAH STATE UNIVERSITY
COLLEGE OF SCIENCE-BIOLOGY DEPARTMENT
Full Course Title:
BIOL 4750 Special Topics in Biology- Tropical Ecology and Sustainability
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Title on transcript:
BIOL 4750 Trop Ecology / BIOL 6750 Trop Ecology
Credits: 2

INSTRUCTOR:

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COURSE OBJECTIVES:

Tropical regions influence our global climate, host the vast majority of the world's biodiversity, and produce some of our most delicious food cultivars (like chocolate!). From a research perspective, the tropics offer a thrilling opportunity to explore fundamental theories of ecology and evolution, study potential feedbacks to climate change, and even contribute to medicine through the discover of botanically-derived pharmaceuticals. Despite their importance, tropical regions face threats such as economic inequality, armed conflict, deforestation, and climate change. The ultimate goal of the course is to provide the basics to understand the diversity and dynamics of tropical forests and their associated natural resources, and the different ways that they are viewed, studied, and affected by the humans, including extinction of species and in a general sense, the course experience aims to accomplish the following objectives:

- Expand students' knowledge and appreciation of tropical ecosystems, including their biodiversity, their ecosystem services, the importance of tropical forests in the global carbon cycle, and conservation issues.
- Develop students' science literacy through familiarity with research and the scientific method
- Improve student's knowledge of the impact of globalization on tropical ecosystems including natural resource management and development.
- Enhance the prospects for students to identify opportunities for further study, professional development, or career advancement in biology, ecology, or natural resource sustainability.
- Enrich the multicultural and diversity awareness and ideological foundation of students at becoming more effective communicators and more knowledgeable about the global community.

We will take a broad view of key tropical ecology and sustainability issues, especially the tropical rain forests that have global scope, implication, and effect.

COURSE DESCRIPTION:

This course is designed for upper level biology undergraduate students, graduates, and others from other majors seeking a learning opportunity to examine tropical ecology and environmental issues in natural resource management in the tropics.

COURSE FORMAT AND CONTENT:
The class will meet once a week -via Zoom- for one hour for a short lecture and student-led discussion. Students are expected to attend the live meetings, complete the weekly readings, and participate in discussions. To encourage students to consider the course content in a broader research context, students will be required to attend two ecology seminars during the semester and write a reflection about the seminars. Students will conduct a literature review based on observations made in the greenhouse tropical plant collection. Students will present on their literature review in class. Students will then propose a research project to addresses a knowledge gap identified in their literature review.

LEARNING OBJECTIVES:
The learning objectives are included for each module in the Course Curriculum presented below.

Course Curriculum

Date	Lecture Topic	Instructor	Reading assignments	Due
January 21	-Class introductions -What are the tropics and why are they important	SR & JM	NA	
January 28	Overview of tropical ecosystems and their services (Part I- carbon cycle, global climate regulation)	SR	Kricher's *Tropical Ecology:* -Chapter 1 (pp. 14-34) -Chapter 9 (whole chapter)	
February 4	Conducting a literature review and designing a research project	JM	Outside reading	
February 11	Overview of tropical ecosystems and their services (Part II – biodiversity, bioprospecting)	JM	Kricher's *Tropical Ecology:* -Chapter 2 (pp. 71-78) -Chapter 4 (whole chapter)	
February 18	Overview of tropical ecosystems and their services (Part III – natural resources, agriculture)	SR	Outside reading	

Feb 17,18	Ecology Seminar 1:	Dr. Diana Six- University of Montana	Evolution and maintenance of symbioses particularly those occurring among trees, bark beetles, ambrosia beetles and fungi in the US, South Africa, Sweden, and Mexico.	
February 25	Tropical forest dynamics and growth forms	JM	Kricher's *Tropical Ecology:* Chapter 3 (whole chapter) Chapter 6 (pp. 188-190, 202-207, 215-218, 222-224)	
March 3-4	Ecology Seminar 2:	Dr. Ivette Perfecto- University of Michigan	Biodiversity and arthropod-mediated ecosystem services in rural and urban agriculture in Mexico and Puerto Rico	
March 4	Presentations			Literature review due
March 11	Presentations			
March 18	Ecological interactions in the tropical forest	JM	Kricher's *Tropical Ecology:* -Chapter 7 (pp 227-230, 238-241, 248-251, 258-271) -Chapter 8 (whole chapter) -Chapter 10 (pp.	Research proposal topic due
March 24,25	Ecology Seminar 3	Dr. Peter Marra Georgetwon University	Ecology and conservation of birds throughout their full life cycles	

March 25	Threats to tropical regions and their inhabitants (Part I – population growth, deforestation)	SR	Kricher's *Tropical Ecology:* -Chapter 1 (pp. 34-37) -Chapter 14 (whole chapter)	
April 1	Conservation and sustainability solutions in the tropics (Part I) – history of successes and failures		Outside reading	
April 8	Threats to tropical regions and their inhabitants (Part II – climate change)		Outside reading	
April 15	TBD			
April 22	Conservation and sustainability solutions in the tropics (Part II) – moving forward	SR	Kricher's *Tropical Ecology:* -Chapter 15 (whole chapter) Janzen (1986): "The Future of Tropical Ecology"	Research Proposal due
April 29-May 5	Final exams			Seminar reflections due (Apr 29)

Canvas

The course will use Canvas, for course delivery (via Zoom), follow up, announcements, assignment delivery and submission, quizzes, discussions, grades, etc. In addition to course follow up, Canvas serves a basic communication of announcements, addressing frequently asked questions (FAQ), and general discussions. Students are expected to monitor Canvas messaging in order to receive communications about the class in a timely manner. The instructor will make efforts to respond to students within 24 hours. Student participation and helpfulness in answering other students' questions in the discussion forum will be evaluated as part of the grading structure. Help using the Canvas system can be obtained by contacting USU Information Technologies at 797-HELP or going to http://it.usu.edu.

Internet access

A reliable high-speed internet connection is required for all students enrolled.

Required Textbook

No required text, however the book: Tropical Ecology by John Kricher. Published: **Mar 20**, **2011**; Copyright: 2011; Pages: 704, will be used as a main reference. PDFs of required reading excerpts will be provided.

Supplementary Textbook:

Douglas P. Reagan and Robert B. Waide, 1996 The Food Web of a Tropical Rain Forest. The University of Chicago Press. 623p. ISBN: 9780226706009

Maarten Kappelle, Thomas E. Lovejoy. 2016. Costa Rican Ecosystems. The University of Chicago Press. 760 pages. ISBN-13: 978-0226278933

Adrian Forsyth, Ken Miyata, Dr. Thomas Lovejoy, 19987 Tropical Nature: Life and Death in the Rain Forests of Central and South America. Charles Scribner's Sons; Reprint edition (January 29, 1987). 248 p. ISBN-13: 978-0684187105

EVALUATION

Attendance and participation in discussions (20%)
Ecology seminars (10%)
Greenhouse literature review (20%)
Class presentation (15%)
Research proposal (30%)
Course reflection (5%)

COURSE GRADING

The course grading system and grading scale will be translated to letter grades as follows: 93-100%: A; 92-90%: A-; 89-88%: B+; 87-83%: B; 82-80%: B-; 79-78%: C+; 77-73%: C; 72-70%: C-; 69-68%: D+; 67-63%: D; <63%: F.

COURSE SUBSTITUTION IN BIOLOGY

This course could substitute as a field class in the Biology Emphasis -which includes substitution for BIOL 3220 Field Ecology (QI)-. It also serves as a substitute for the classes in the 'Plant Biology cluster' in the Ecology/biodiversity Emphasis. It can also work as a Biology Elective credit in any Emphasis in the Biology major.

ACADEMIC FREEDOM AND PROFESSIONAL RESPONSIBILITIES

Academic freedom is the right to teach, study, discuss, investigate, discover, create, and publish freely. Academic freedom protects the rights of faculty members in teaching and of students in learning. Freedom in research is fundamental to the advancement of truth. Faculty members are entitled to full freedom in teaching, research, and creative activities, subject to the limitations imposed by professional responsibility. Faculty Code Policy #403 further defines academic freedom and professional responsibilities: http://personnel.usu.edu/policies/403.htm.

ACADEMIC INTEGRITY - "THE HONOR SYSTEM"

Each student has the right and duty to pursue his or her academic experience free of dishonesty. The Honor System is designed to establish the higher level of conduct expected and required of all Utah State University students.
The Honor Pledge: To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge: "I

pledge, on my honor, to conduct myself with the foremost level of academic integrity." A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize.
Traveling abroad may represent a good learning opportunity, however unusual and incorrect conduct may pose a risk not only for the student but also for others. Abiding to the country's law and university's policies will make the students not only look like "good ambassadors" but also will keep everyone safe.

PLAGIARISM
"Plagiarism includes knowingly representing by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials" (*Student Code* page 10). If you have any questions about whether work you submit is plagiarized, contact your instructor *before* you hand it in. **In addition, in this course, you may not hand in the same paper for two classes. Please contact your other instructors; some instructors may have a different policy regarding what is sometimes called "self-plagiarism."**

STUDENTS WITH DISABILITIES
The Americans with Disabilities Act states: "Reasonable accommodation will be provided for all persons with disabilities in order to ensure equal participation within the program. If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center, preferably during the first week of the course. Any request for special consideration relating to attendance, pedagogy, taking of examinations, etc., must be discussed with and approved by the instructor. In cooperation with the Disability Resource Center, course materials can be provided in alternative format, large print, audio, diskette, or Braille."

SEXUAL HARASSMENT
Sexual harassment is defined by the Affirmative Action/Equal Employment Opportunity Commission as any "unwelcomed sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature." If you feel you are a victim of sexual harassment, you may talk to or file a complaint with the Affirmative Action/Equal Opportunity Office, located in Old Main, room 161, or call the office at 797-1266.

GRIEVANCE PROCESS (STUDENT CODE)
Students who feel they have been unfairly treated [in matters other than (i) discipline or (ii) admission, residency, employment, traffic, and parking - which are addressed by procedures separate and independent from the Student Code] may file a grievance through the channels and procedures described in the Student Code: http://studentlife.tsc.usu.edu/stuserv/pdf/student_code.pdf (Article VII. Grievances, pages 25-30).