SYLLABUS AND TRIP ITINERARY

BIOL 318: Tropical Ecology May-term 2017
Tropical Ecology and Biodiversity in Ecuador

Location: Pontificia Universidad Católica del Ecuador and Wildsumaco Biological Station, Napo Province

Instructor: Paul Zwiers (pronounced "zoo-ears"), Ph.D.
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Prerequisites: BIOL 106, or permission of the Department
Credit Hours: 4
Textbook: *Tropical Ecology* by John Kricher
Additional materials: Notebook for journal entries and exams, notebook for class notes, writing utensils, binoculars (available upon request), field notebook (to be provided)

Course description: This course will provide an introduction to the structure, function, biological diversity, and conservation of terrestrial neotropical ecosystems. This course is a travel course and will take place at both the Pontificia Universidad Católica del Ecuador (PUCE) in Quito and FMU's Wildsumaco Biological Station (WBS) in the Napo Province of Ecuador. Lectures will commence during our time in Quito, and continue at WBS alongside intensive hands-on field experience in lower montane rainforest ("Andean foothill forest").

Class design:

Given the compact nature of the late spring (May) term, all lectures and most other class work will be done in Ecuador so as to maximize our time there. Student project presentations and the last exam will be given at FMU at the conclusion of the course. While in Quito, we will have morning lecture from 9:00-11:30 at PUCE, break for lunch, and reconvene for afternoon lecture from 2:00-4:00. While at WBS, students can expect lectures every other day from 2:00-3:30. The tentative course schedule is below. Chapter readings are from Kricher.

Pre-course meetings @ FMU: Schedule, safety, logistics, packing list, expectations, *etc.*
May 8 Travel: to Hotel Sierra Madre in Quito, Ecuador. Depart Charleston International airport connecting in Atlanta, GA.
May 9 @ PUCE: Introduction to Quito and Ecuador; Discussion of Student Research Projects and Overview of Field Techniques & Equipment; What and Where are the Tropics; Biogeography and Evolution in the Tropics; Inside Tropical Rain forest: structure & biodiversity (chapters 1-4).
May 10 @ PUCE: A Study in Biodiversity: rain forest tree species richness; A Shifting Mosaic: rain forest development and dynamics; Biotic Interactions and Coevolution in Tropical Rain Forests; Trophic Dynamics in Evolutionary Context (chapters 5-8).
May 11 Travel: to WBS stopping at Guango Bird Lodge, lunch in Baeza. Introduction to WBS and review of residency rules upon arrival at WBS.
May 12-22 @ WBS: **Exam I**; Develop and work on student research projects; Nutrient Cycling and Tropical Soils; Other Tropical Ecosystems: from the mountains to the rivers to the sea; Humans as part of Tropical Ecosystems: focus on the neotropics; Forest Fragmentation and Biodiversity; Conservation Outlook for the Tropics (chapters 10-15).
May 23 @ WBS: Pack up personal and research equipment. Prepare to leave WBS.
May 24 Travel: to Quito via Papallacta. Depart Quito.
May 25 Travel: to Charleston International Airport via Atlanta, GA.
May 26 @ FMU: Student research presentations; **Exam II**.

Objectives:
Welcome to Tropical Ecology and our exploration of Ecuador! This course has several objectives.

Our primary goal is to understand and appreciate the richness and diversity of tropical habitats. To accomplish this, we will visit and study a prime example of lower montane rainforest, or east Andes slope "foothills forest", in Ecuador. Our group will be spending most of our time at the Francis Marion/UNCW Wildsumaco Biological Station near Sumaco Volcano. Afterwards, I hope that you will appreciate the diversity and "connectedness" of life, humanity's dependence on the global ecosystem, the threats to these habitats from human expansion, and the need to conserve these treasure-troves of biodiversity.

Second, you will learn fundamentals of tropical ecology and how to conduct a field study in behavioral ecology. You will design and conduct a research project of your own design with another student. We will discuss and develop project ideas during our time at PUCE, you will implement your project during our time at WBS, and you will present your results to FMU faculty back on the FMU campus.

Finally, we will also experience Ecuadorian culture. Examining other cultures provides us with a unique frame of reference, allowing us to reflect on the positive and negative attributes of our own culture.

Assessment:
Exams- Material covered in the exams comes directly from my lectures, which are organized based on the textbook. By participating in the class, taking clear notes, studying effectively, and following up in the textbook, students should perform very well on the exams. The first exam will be given at WBS, and will consist of questions I project on the screen and which students will answer in their journal notebooks. The second exam will be given back at FMU. Keep in mind that all that we see during hikes, species lists and identification, etc. are fair game for the exams.

Exam I	20%
Exam II	20%
Participation, attitude	15%
Field Journal	15%
Research project & presentation	30%

Participation & attitude- Every day will involve hikes and exploration of natural history and ecology. Participation in these excursions is a component of this grade. During times of adverse weather, you will be participating in lectures, discussions and working on aspects of your research project. The other component of this grade is your contribution to the success of this trip, your attitude, enthusiasm, and willingness to work as seen by your willingness to help move equipment, keeping our spirits up during rough goings or the inevitable delays, entertaining us with your zany antics, and not being the "bad apple"; generally keeping a positive attitude. Isolationism or the ostracism of others will not be tolerated. Although there will be free time, I expect you to take advantage of getting outside. Lots of chair / hammock time can lower this grade component. Remember: It's a class, not a vacation; minimum effort = minimum grade; and no, there are not automatic A's in a course like this.

90-100%	A
87-89.9%	B+
80-86.9%	B
77-79.9%	C+
70-76.9%	C
67-69.9%	D+
60-66.9%	D
<60%	F

Field journal- You will each keep a field notebook in which you record a list of species observed, notes on the different ecosystems and habitats encountered, and the data from your field research project. The instructor will read your notebook; so if you would like to keep a more personal diary, bring it separately. Notebook entries *must* be made *daily*, while the information is fresh in your mind. Notebooks may be collected and spot-checked on several occasions during the trip. The notebook is an easy component to complete, but you must allocate time for daily entries. Special water-resistant field notebooks ("Rite-in-the-Rain") are provided.

Research project & presentation- You and a classmate will conduct a research project at WBS. This project will be of your own design but must be discussed with me, and must be a "college-level" project. Students will present the results of this project at FMU to FMU faculty and students. Presentations will be 15 minutes long allowing for 5 minutes of questions. More details will be provided concerning the format of the presentation.

REAL-Grant requirements: As recipients of a REAL (Ready to Experience Applied Learning) grant in support of your trip to Ecuador, each of you must complete the FMU REAL assessment forms, available online. We will go over these procedures in class and once we are back at FMU.