

Field Studies in Biodiversity-Ecuador Biology 159/359

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COURSE SYLLABUS & GENERAL INFORMATION:

This course uses an international experience as a backdrop to learn about evolutionary, ecological and biogeographical processes that determine the ranges and biodiversity of organisms. The course begins with three class meetings in late June on the Gonzaga campus (online meetings can be arranged for non-Gonzaga) and is followed by travel and study from July 3-29, 2009 during which we will utilize cooperative learning among class participants and local experts. Students are responsible for keeping a field journal, conducting two multi-day research projects and becoming an expert on a specific topic.

Prerequisites: Biology majors, Biol. 202 and permission. Biology 159: permission. Course may be retaken with permission.

TEXTBOOK:

A Neotropical Companion, 2nd ed., John Kricher

GRADING:

	Majors	Non-majors
Field notebook	20%	25%
Expert topic	20%	25%
Field project	20%	25%
Research poster	10%	15%
Research paper	20%	-----
Cooperative learning, participation and effort	10%	10%

The final grade will be determined by the percentage of the total possible points. The cutoff points will be no higher than the following: A = > 90%; B = 80 - 89%; C = 70 - 79%; D = 60 - 69%; F = <60%.

Field Notebooks: Students are expected to take field notes on a daily basis, following the methods used by Joseph Grinnell, the first Director of The Museum of Vertebrate Biology at the University of California, Berkeley. We will give you field notebooks and specific guidelines for taking field notes. During our trip, we will review your notebooks to give you feedback on the quality of your notes. The field notebook will be turned in for final grading on the day you return to Gonzaga.

Expert topic: During our first meeting at Gonzaga students will be assigned a topic on which they will become an expert through studying the topic and literature research. Before leaving student will be expected to prepare handouts to give to each member of the class, just prior to giving the presentation to the class.

Examples of expert topics:

- Climate and biomes (1)
 - Tropics
 - Mainland versus island
 - Biodiversity patterns (attitudinal affects, latitudinal affects, etc.)
- Why is biodiversity threatened? (1-2)
 - Climate change
 - Habitat loss
- Biodiversity (1)
 - What is biodiversity and how it measured?
- Succession in tropical forests (1)
 - Primary versus secondary forests
 - Structural differences
- Coevolution (1)
 - Plant pollinator systems in the tropics
- Ecosystem services (2)
 - Energy (biofuels and oil) (1)
 - Herbal and medicinal plants (1)
 - Historic uses and current issues
- Ecotourism (1)
 - Tropics/Ecuador
 - Galapagos
- Conservation organizations in Ecuador (e.g. Yachana Foundation from NYT article). (1)
- What is the deal with Darwin's Finches? (1)
 - Darwin's observations
 - Recent and current work
- What is island biogeography? (1)
 - Island species versus mainland species
 - Effective population size and threatened species on islands
 - Patterns of evolutionary change on Islands versus mainland populations
- Habitat diversity on the Galapagos islands (1)
 - Within versus between island comparisons
- Galapagos Tortoises as a threatened species (1)
 - Genetic diversity
- Political and economic issues on the Galapagos Islands (1)
 - Commercial fishing around the Galapagos islands debate

Research project: Research projects will be carried out at the Galapagos Academic Institute for the Arts and Sciences (<http://www.usfq.edu.ec/gaias/index.html>) on San Cristobal Island and the Tiputini Biodiversity Reserve <http://tiputini.usfq.edu.ec/index.html> in western Amazonia. These projects will be designed while on site and will include development of a question (and hypothesis), field protocol and data collection. The majority of the analysis will be completed after returning to Gonzaga.

Project topics from 2008 included:

Vascular epiphyte diversity and abundance in primary and secondary lowland neotropical forests in Ecuador

Complex soil foraging in the social spider *Anelosimus domingo*

Roadside ecology: the impact of proximity to a major road on the physiognomy of the rainforest

Color vision: the effect of wavelength produce by LED and incandescent bulbs on attraction to light

Research poster and paper: Based on your research project students will be expected to produce a poster (and a paper for Biology Majors) with a description of the research project, the results obtained and a discussion. These posters will be due at the end of the summer II (August 8th). Details and expectations for the poster and paper will be provided.

Cooperative learning: Student contributions to the class are essential. Each student comes from a variety of backgrounds and experiences, which makes each of a unique educational resource. Questions are not only welcome; they are expected in this class. An important component of learning the material covered in this class is the ability to ask questions, share observations with the class and listen respectfully to your classmates questions and observations.

OTHER IMPORTANT INFORMATION

Timely arrival: Arriving late because, for example, you are unable to get up in the morning, disrupts the class and shows a lack of respect for your fellow students and the instructor. If you arrive late for transportation to another field site you will need to find your own way there (good luck).

Academic honesty: We take this personally and seriously. Cheating on any assignment will result in a zero for the assignment. Gonzaga University has a clearly stated academic honesty policy that is given out during orientation; you can also obtain a copy of the University's academic honesty policy from your advisor.

Plagiarism: I encourage you to work together; however, we do not expect to see similarly worded assignments turned in by different students. Plagiarism is the copying or paraphrasing of thoughts and writings of another author (i.e. including your study partner, roommate, etc) and presenting them as your own work, which is avoided by putting your ideas into your own words. Plagiarism also includes improper citation of another author. Review the following sites for an explanation of plagiarism: <http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml> and <http://science.widener.edu/svb/essay/plagiar.html>

Persons with disabilities: Students who have a documented disability that affects their ability to access information and/or materials presented in this course are strongly encouraged to contact Disability Resources, Education, & Access Management (DREAM) office (Foley 2nd Floor, extension 4134) as soon as possible. The staff at DREAM will then provide me with individually-tailored guidelines to allow for your full and fair participation in class. All arrangements and discussions will remain confidential.

Other problems: If you have concerns or complaints about this class—its policies, the classroom environment, etc.—please let us know. We want to ensure an open and effective

learning environment. If you are not comfortable doing that, or you are not satisfied with the resolution of the issue, you should contact the Chair of Biology, Dr. William Ettinger.