Ecology Laboratory
ECOL 3510
Maymester 2018

Meeting Times:
Lecture & Laboratory: daily, times to be determined based on location
3 credit hours

Instructor:
Dr. Scott Connelly
Email: scottcon@uga.edu

Course Overview:
This course is designed to provide techniques and methodologies to assess organismal, population, community, and ecosystem ecological interactions. During our weeks in Costa Rica, we will explore various tropical environments, discover their biological wealth, and gain an appreciation of the natural history of organisms that we encounter. We will examine and discuss ecological patterns, processes, and interactions occurring globally, with specific emphasis on those that characterize tropical systems. We will focus on the observation of tropical organisms in the wild, address threats to tropical biodiversity, and examine current conservation approaches in Costa Rica and elsewhere. Although some class topics may be presented in a formal classroom setting, there will be an emphasis on experiments and analyses carried out in both traditional laboratories, and more often than not, out-of-doors, as we travel throughout the country. In addition to the time spent at our university biological station in the premontane forests of San Luis, we will also visit La Selva Biological Station on the Caribbean slope and spend time near coastal reefs and mangroves on the Pacific side of the country. Students will visit various tropical dry forests, cloud forests, tropical rain forests, and coastal systems, all found within Costa Rica.

This is a challenging and very intensively taught laboratory course. Students will complete unique and independently designed field research, which will be designed from scratch to answer relevant ecological questions. Working individually or in small groups, and with guidance from faculty, each student will complete over 45 hours of research in the field and laboratories as we visit the diverse ecosystems Costa Rica has to offer.

The following specific course objectives and topics will be addressed during the semester:

- Become more knowledgeable in natural history and adept at observing wildlife.
- Develop skills of analysis and critical thinking.
- Be aware of the interplay of structure, function, and behavior in the evolution and ecology of plants and animals.
- Recognize the major groups of tropical flora and fauna, including plants, insects, amphibians, reptiles, birds, and mammals, and learn to identify them in the laboratory and field.
- Understand the major patterns of geology, geography, biogeography, climate, and soils of Costa Rica.
- Be aware of available tools and most suitable approaches to assess biological and environmental patterns.

- Competently use a variety of standard laboratory and field equipment and instruments.

- Measure and interpret biotic and abiotic components of terrestrial and aquatic systems.

- Investigate what makes a good research question, and how to test hypotheses.

- How to create new knowledge by properly designing research, applying appropriate statistical methods, and accurately interpreting findings.

- Apply skills of observation and field taxonomy on visits to new areas, identifying unfamiliar species.

Reading and Additional Material:
Several related additional peer reviewed readings will be provided. You will be responsible for all of the material covered in class, during laboratory exercises, field excursions, and in assigned readings.

Course Journal:
Each student is required to keep a course journal. The journal is to be a valid, informative, detailed record of what you have learned and experienced on this program. It will include all class lecture notes, laboratory work, field notes, illustrations, and daily writing. You will use it as a reference and as a resource for your own work during the program. Other details on what to include as part of your journal will be discussed in Costa Rica.

Academic Honesty:
The Institute of Ecology adheres to the University's standards in defining academic honesty; you are bound by the rules governing academic honesty at UGA. Ignorance of what constitutes plagiarism or dishonest work is no excuse. Conviction will result in a grade of "F" for the course and may incur additional penalties from the University. Please refer to the UGA Academic Honesty Policy, located on the web at: www.uga.edu/honesty/ahpd/culture_honesty.htm

Course Grading:
Grading will be determined by a final laboratory practical exam, a final written exam, a natural history formal presentation, quality and completeness of journal, and overall preparation and professionalism. The written exams will be short answer and essays. Questions will be written to assess your ability to synthesize the material presented in class and during all field locations, including travel time. You will be tested on material from the lectures, course text, and any discussion. The grading distribution will be:

Level of effort and performance (design, analysis, and written paper) project 1:	20%
Level of effort and performance (design, analysis, and written paper) project 2:	20%
Laboratory Practical:	15%
Symposium Presentation:	20%
Team contribution:	10%
Preparation, Participation & Professionalism:	15%

The plus/minus grading system will be used, according to UGA policy.

Special Needs:
Students with disabilities who may require assistance should consult with the instructor as soon as possible.