



## **CENTER FOR INTERNATIONAL PROGRAMS**

**Course name:** Tropical Birds

**Course code:** ENV 3100

**Professor:** Dr. César Sánchez

**Total:** 60 hours

## **COURSE DESCRIPTION**

This course will introduce the major topics in ornithology, with an emphasis on the neotropical avifauna. The major topics of the course include those unique features that make Neotropical avifauna a highlight among bird studies, including its evolutionary relationships, a very high species diversity in the Neotropics, and the natural history of Costa Rican birds. With its 900+ species of birds Costa Rica is a unique country as an introductory Neotropical ornithological and birding experience. The two field trips will introduce the main groups of birds present in Costa Rica, their behavior, and skills to identify them.

## **OBJECTIVES**

1. Understand what are the main features of birds and how are they related to other vertebrates.
2. What are the systematic relationships among birds, their taxonomy, and the main Costa Rican bird' groups. How are birds distributed worldwide, in the Americas, and where is their diversity highest
3. Learn about bird evolution, and where birds come from.
4. Study bird behavior and natural history, with an emphasis on Neotropical birds.
5. To become familiar to the main topics of Tropical bird biology.
6. What is the conservation status of birds in the world, the Americas and the Neotropics conservation

## **COURSE PRE-REQUISITES**

It is recommended, but not required, that students complete a basic biology course prior to entering this course

## **COURSE CONTENTS**

### **Unit 1: Introduction to the Class Aves**

- Introduction to bird history. The link between birds and dinosaurs. Reptilian ancestors.
- Evolution of feathers
- Avian flight
- Modern birds
- Evolution of birds

### **Unit 2: Phylogeny and Taxonomy**

- Classification and Phylogeny
- Taxonomy
- Diversity of birds

### **Unit 3: Form and function**

- Feathers
- Flight
- Physiology
- Feeding

### **Unit 4: Behavior**

- Senses and neurobiology
- Visual Communication
- Vocal Communication
- Navigation (migration)

### **Unit 5: Sex**

- Mates
- Nesting and parental care
- Growth and development

### **Unit 6: Conservation in the Neotropical Region**

- State of the birds in the Americas, Latin America and Costa Rica
- Forest vs non-forested habitats
- Climate change and birds

## **METHODOLOGY**

Classes will be imparted every week by the professor, and include paper discussions, talks (sometimes by invited professors), and laboratory time. Two field trips to different locations will be taken.

### **Participation**

Students must be active during the class time, ask questions and give their own opinion and experiences during discussions, especially during news presentations, case studies and debates performed in class. It is important asking questions after the other partners' presentations. This participation enriches the content of the course.

### **Field trips**

Field trips are obligatory. The mandatory fieldtrips in this course are not excursions. Assistance and behavior during the fieldtrip will be evaluated (punctuality, participation, etc.). Students must be on time for all fieldtrip related activities including departure, return and scheduled meal times.

Students must carry **small notebooks** to write down anything they see or learn while in the field and what they think about it. Each person's journal will be unique to them: each person will notice different observations and everyone could interpret similar things differently.

It is highly recommended that students bring to the trips binoculars. These should be of magnification 7,8,10, and with an aperture ranging from 35-45 mm. 8x40 and 10 x42, are some of the best. The following site provides information of a wide range of binoculars of different qualities and prices (<https://www.allaboutbirds.org/best-binoculars-the-cornell-lab-review-2013/>).

### **Field trip reports**

All written assignments will be uploaded to Moodle. All assignments will have a deadline to be sent. It is each student's responsibility to be aware of the deadline (shown on Moodle for each assignment).

An example of the assignment will be provided on Moodle previous to every field trip.

### **Final Assignment**

The final assignment has free topic. The professor will give a list of possible topics; each student can choose one of them or propose another one, according to its own interest. The final assignment must be based on scientific papers, reports and/or serious web sites. Students will present a written report and an oral presentation.

The assignment includes two parts: the first part is an introduction to the topic (review); and the second part includes one or two specific case studies or examples. At the end, personal opinion about the topic and conclusions must be included.

The final written report will be evaluated based on well-defined focus, structure and conclusions, should be 9-10 pages (plus images) and should include at least 10 references. The presentation should be 15 minutes long, plus 5 minutes for questions.

## EVALUATION

Final Assignment	15%
Attendance and Participation	10%
Midterm Test	15%
Final Test	15%
Lab Report	10%
Paper Discussions	5%
Field trip 1	15%
Field trip 2	15%

## Attendance

The student will fail the course if he/she has more than two absences. The two absences cannot be during the same month. Field trips assistance is obligatory. An unjustified absence to a fieldtrip will immediately mean failing the course.

## Please Note

Professors have the right to expel a student from the classroom should he / she:

- 1) be improperly dressed
- 2) be under the influence of alcohol
- 3) Behave in a disrespectful way.
- 4) The use of mobile phones in class is prohibited

## REFERENCES

Garrigues, R. (2007). *The birds of Costa Rica*. Christopher Helm Publishers Incorporated.

Gill, F. B. (1995). *Ornithology*. Macmillan.

Janzen, D. H. (1983). *Costa Rican natural history*. University of Chicago Press.

Stiles, F. G., & Skutch, A. F. (1989). *Guide to the birds of Costa Rica*. Comstock.

Stutchbury, B.J. & E.S. Morton. (2001). *Behavioral Ecology of Neotropical Birds*. Academic Press