

Primate Behavioral Ecology (Syllabus Session #1 Ometepe)
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COURSE DESCRIPTION

This course will cover the behavior and ecology of Old and New World Primates from an evolutionary perspective. Emphasis will be given to the two species present at Ometepe: white-faced capuchins (*Cebus capucinus*) and mantled howling monkeys (*Alouatta palliata*). The course at Ometepe offers a wonderful opportunity to gain hands-on field experience in a truly extraordinary setting, surrounded by tropical forest, sandy beaches and looming volcanoes inhabited by a remarkable diversity of fauna and flora.

This is an intensive field course in primate behavior, and is equivalent to an upper-level undergraduate course. An enjoyment of highly physical outdoor adventures is a must! Many days are spent rising before dawn to get to the field to begin observations of howler monkeys or other field activities, eating lunch in the field, and returning mid-afternoon for a couple of hours to study/rest before dinner. Evenings are spent in classroom lectures and discussion. After the first week of the course, students will work with the instructor to develop an independent research project. After the project is approved, students collect a minimum of 25 hours data for their project.

The course is rigorous and, with the exception of a few excursions to other parts of the island, there isn't much 'free' time to explore Nicaragua. [I recommend staying a week after the course ends to see some of the country if you are interested in that.] You will be exposed to a broad spectrum of primate behavior, fieldwork in general, as well as field primatology...and come away with a more integrated and comprehensive perspective of primate behavioral research and conservation.

COURSE OBJECTIVES

Throughout this course, the importance of the study of primates for the following themes will be emphasized:

- To understand the social and physical diversity within the order Primates
- To understand the ecological influences on sociality and behavior
- To understand the interplay of natural selection, environment, and behavioral adaptation in non-human primates
- To understand the methods used in primatological research and the issues involved in primate conservation

REQUIRED TEXTBOOKS

The following books are essential for supplementary understanding of primate behavior and ecology, as well as field techniques in primatology. They should be accessible through your university bookshop, and also on the internet at www.amazon.com or www.amazon.co.uk.

- 1) Strier, Karen B., Primate Behavioral Ecology, 3rd edition. Allyn and Bacon Publishing, 2000 (ISBN_0-205-20019-2)
- 2) Patterson, J.D., Primate Behavior, Second Edition, 2001 (ISBN 1-57766-165-6)

The following books have excellent general primate information, and some have information and data relevant to the species at Ometepe. Additionally, some discuss field techniques that may prove helpful. These would be excellent to utilize for group projects, independent research projects, and for your own interest. I will bring several of these titles with me, and the libraries at Ometepe have some of these texts as well.

- Dolhinow, P., & Fuentes, A. 1999. The Nonhuman Primates. Mountain View, CA: Mayfield Publishing. ISBN: 1559349743
- Fleagle, J.G. 1999. Primate Adaptation and Evolution. Academic Press (I will bring a copy of this). ISBN: 0122603419
- Fleagle, J.G., Janson, C.J., Reed, K.E. 1999. Primate Communities. Cambridge University Press. ISBN: 0521629675 (I will bring a copy)
- Janzen, D.H. 1983. Costa Rican Natural History. Chicago: University of Chicago Press. (available in the Ometepe library). ISBN: 0226393348
- Kricher, J.C. 1989. A Neotropical Companion. Princeton, NJ: Princeton University Press (available in the Ometepe library). ISBN: 0691009740
- Rowe, N. 1996. The Pictorial Guide to the Living Primates. New York: Pogonias Press. ISBN: 0964882515
- Smuts, B.B. D. L. Cheney, R. M. Seyfarth, R. Wrangham, T. T. Struhsaker. 1987. Primate Societies. Chicago: University of Chicago Press. (ISBN: 0226767167)
- Sussman, R. W. 2003. Primate Ecology and Social Structure, Vol.2: New World Monkeys (revised 1st edition). Boston, MA: Pearson Custom Publishing. ISBN 0536743649
- Terborgh, J. 1983. Five New World Primates: A Study in Comparative Ecology. Princeton, NJ: Princeton University Press. ISBN: 069108338

COURSE STRUCTURE

The course will be broken up into two main sections: “primate behavioral ecology/field techniques” and “independent research project”.

1. PRIMATE BEHAVIORAL ECOLOGY/FIELD TECHNIQUES: this is the first half of course and is based on classroom lectures, participation in discussions, oral presentations, field exercises, and one exam.

Lectures/Readings

The specific lecture topics will fall under the following general categories:

Research Design: Methodology and Data Collection Techniques

Primate Evolution,

Taxonomy & Distribution

Primate Social Organization & Behavior

Primate Dietary Ecology

Primate Communities (niches, polyspecific associations, predators)

Natural History of the Primates Found at Ometepe (group presentations on genera rather than lectures)

Primate Conservation

Readings will be assigned in the texts, and many journal articles (as well as other books) will be available in the Ometepe library for additional information.

Field Exercises

This part of the course involves supervised participation in data collecting techniques, methods, and procedures discussed and practiced under actual field conditions. Students will work closely with the professor and teaching assistant on the following field techniques:

- **Habitat Description:** you will compare different habitats for tree height, crown volume, and canopy cover, and develop a basic habitat profile.
- **Plant Phenology & Productivity:** you will learn techniques to measure primate food availability, and you will collect and identify plant samples.
- **Primate Population Analysis:** you will learn how to census primate groups.
- **Primate Feeding Ecology:** you will learn how to determine what animals are eating, how much they are eating, and how diet differs according to season, age and sex class.
- **Primate Observation Techniques and Ethograms:** you will learn techniques for aging, sexing, and identifying individual primates, as well as developing a behavioral profile.

In addition, there will be research methodology exercises that will provide useful practice for various data-taking techniques that will be used during the independent project. You will learn various elements of research design, including how to develop an ethogram (or “behavioral repertoire”), and various behavioral sampling methods.

Journal Article Critique

This assignment will introduce you to the professional primatological literature and give you a sense of current styles of writing and topics of interest in primatology. You will select a journal article from the Ometepe library, from articles I bring with me, or perhaps from something that you bring along. More details will be provided during class.

2. INDEPENDENT RESEARCH PROJECT: this takes place during the second half of the course. With the help of our faculty, you will develop and carry out your own field research project. This will be an original project of your own choosing on some topic of primate behavioral ecology, and it will involve researching, developing, writing up, submitting and getting feedback on a specific research proposal, carrying out the project, analyzing and writing up your results, and orally presenting these results to the rest of the class at the end of the field course. I will be available throughout the process to help with research design, and to offer advice during the data collection process.

ASSESSMENT/ GRADING

Attendance is mandatory at all lectures, methodology talks and field exercises.

You will receive two grades for this course.

I. The first grade is for PRIMATE BEHAVIORAL ECOLOGY/FIELD TECHNIQUES. This part of the course involves supervised participation in collecting techniques, methods and procedures discussed and practiced under actual field conditions (see above) and lecture material on primate topics.

Your Field Techniques grade will be based on:

- Mastery of techniques during the six-day rotation (50%)
- Effectiveness and quality of a ten-minute presentation (20%)
- Score on mid-term examination (25%)
- Cooperation and ability to work with others (5%)

II. The second grade is for the INDEPENDENT RESEARCH PROJECT. This part of the course involves the interpretation, evaluation, and organization of data in field primatology, as well as written proposals and reports on research.

Your Research Design grade will be based on:

- Research proposal (25%)
- Data collection (25%)
- Data analysis and write-up of report (25%)
- Oral presentation of research results (25%)

ASSIGNED READINGS

- 26 May – 28 May: STRIER Ch. 1-2, pp. 1-68
 - 29 May – 3 June: STRIER Ch. 4-6, pp. 94-199
 - 4 June – 9 Jan: STRIER Ch. 7-10, pp. 200-310
 - 10 June – 12 June: STRIER Ch.11-12, pp. 315-354
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- Specific Readings from the PATERSON text will be assigned during the Field Methods activities.

TENTATIVE COURSE SYLLABUS (subject to change)

May 25th students arrive in Nicaragua and we will travel by bus and ferry to Ometepe. Anyone coming in the day before will need to stay overnight at the Best Western at the airport.

For the first portion of the course we will generally have early breakfast followed by field methodology sessions that will alternate between morning and afternoons for students. Students groups will go with the instructor to the field either in the morning, followed by lunch and then a free afternoon to read/study/rest, or students will have an open morning to read/rest/study and then an afternoon field session with lunch in the field. Lectures will be from 4:30-6:00, followed by dinner and then discussion/student presentations in the evening.

During the second portion of the course, students will be collecting data for their independent study projects. These days will typically be spent rising before dawn to get to the field to begin observations of primates, eating lunch in the field, and returning mid-afternoon for a couple of hours to study/rest before dinner. Evenings will be spent in classroom lectures and discussion.

DAY TOPIC/ACTIVITY

May 25	Arrival to Ometepe BFS; Introduction & orientation to the station, its rules, regulations, safety tips, course content, etc.
May 26	Lecture: Photo essay of the living primates Field: Orientation walk to familiarize students with field site, forests & forest etiquette
May 27	Lecture: What is a primate? Primate taxonomy & distribution Field: Navigate trails, use of compass, habitat description *Optional: Night boat ride to observe nocturnal herptofauna & mammals
May 28	Lecture: Preliminaries necessary to all research (animal identification, ethogram, & observation)

- Field: Trail and site mapping, plant phenology
- May 29 Lecture: Natural selection, kin selection, and sexual selection
 Field: Primate censusing, aging & sexing individuals
 *Optional: Night census walk and survey of nocturnal mammals
- May 30 Lecture: Primate social organization
 Field: Plant phenology & identification
- May 31 Lecture: Dominance, social interactions, relationships
 Field: Primate observations & ethogram
- June 1 Lecture: Conflict & reconciliation; coalitions & alliances
 Field: Hike to waterfall
- June 2 Lecture: Feeding ecology & foraging behavior
 Field: Different ways of measuring food intake
- June 3 Lecture: Male-male competition, mate choice
 Field: Brainstorm ideas for independent research projects
- June 4 Lecture: Field research designs
 Field: Design research projects present proposals in evening
- June 5 Lecture: Infanticide, reproductive suppression, infanticide
 Field: Data collection for independent research projects
- June 6 *Possible volcano hike
- June 7 Lecture: Evolution of intelligence/ Primate communication & cognition
 Field: Data collection for independent research projects
- June 8 Lecture: Social learning, tool use; culture
 Field: Data collection for independent research projects
- June 9 Lecture: Primate conservation
 Field: Data collection for independent research projects
- June 10 *Possible trip to Granada
- June 11-14 Data collection for independent research projects/ Evening discussion of field observation and data collection methods
- June 15 Comprehensive Final Exam
 Data analysis and write-up of project

- June 16 Data analysis and write-up of project
- June 17 Research paper due; presentations of projects; end-of-course fiesta
- June 18 Departure from Ometepe BFS
- June 19 Return home

STUDENTS WITH SPECIAL NEEDS

If any member of the class has a disability and needs special accommodations, please let me know ASAP. I will be happy to work with you to ensure that you have a fair opportunity to perform well in the class.

Academic integrity is violated by any dishonesty in submitting field exercises, tests, or the independent research projects. Any clear violation of academic integrity will be met with sanctions.