

Course Syllabus

Tropical Field Biology and Primatology

May 20 - June 10 & July 20 - August 10



Instructors:

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Course Objective:

The goals of this course are to two-fold: first, to give participants advanced training in field techniques important to conservation and research, and second, to expose them to the most diverse community of plants and wildlife anywhere on the planet. This course emphasizes field exercises and learning over classroom-based lectures, and allows students to design, implement and present the results of an independent research project. Students will also read literature on applied tropical biology research and conservation, and conduct group discussions of the findings.

TOPIC OF STUDY	ACTIVITY	DESCRIPTION
Module 1: An Introduction to Field Research		
I. Introduction		
▫ Threats to the Amazon in the Madre de Dios Department, Perú	Lecture	A review of the major conservation approaches in the MDD, and their successes
▫ Conservation efforts of the Amazon Conservation Association (ACA)	Lecture	Presentation on ACA conservation efforts in the MDD
▫ PrimatesPeru and Conservation	Lecture	A review of research and conservation goals, and what's in store for the future
II. Field Ethics	Lecture	Keeping your footprint to a minimum while working with wildlife in the tropics
III. Field safety precautions and useful tips lecture	Lecture	Ensuring your safety at the field site, and that of the wildlife around you.
IV. Navigation using a GPS and compass		
▫ Waypoint data and how they are used	Exercise	Recording key features of the research station with waypoints
▫ Track data types and manipulations	Exercise	Outlining the station perimeter and main buildings using track data
▫ Visualizing spatial tracks and points	Exercise	Analysis of GPS data; creating a digital map in the field (laptop required)
V. Get to know your binoculars	Exercise	Accurately identifying objects in the distance using camp and forest exercises
VI. Working with forest trail systems		
▫ Prescribed on-trail hikes	Exercise	Learning to read the trail-map while making basic field observations on wildlife
VII. Working without forest trail systems		
▫ Prescribed off-trail hikes	Exercise	Using your navigation skills to complete a scavenger hunt and collect GPS data
<i>MODULE 1 QUIZ</i>		

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TOPIC OF STUDY	ACTIVITY	DESCRIPTION
Module 2: Monitoring Mammals, Birds and Plants		
I. Amazonian mammals	Lecture	
▫ Motion sensing cameras	Exercise	Censusing mammals using camera-traps
▫ Radio Telemetry , part 1	Exercise	Working through training phases of increasing intensity: detecting close signals, far signals, and finally, moving signals
▫ Mist netting bats	Exercise	Learning bat biology up-close
II. Amazonian birds	Lecture	
▫ Bird watching	Exercise	Training on bird anatomy, calls and flight patterns to become an ornithologist
▫ Mist netting birds	Exercise	Examining small birds up close, and learning to identify each one
III. Recognizable plants of the Amazon	Lecture	
▫ Plant identification basics	Exercise	Grasping plant morphology, identification characters, and taxonomy guides
▫ Forest succession transect	Exercise	Monitoring transect lines from successional and old growth forest
<i>MODULE 2 QUIZ</i>		
Module 3: Reptiles, Amphibians, and Insects		
I. Amazonian Reptiles and Amphibians	Lecture	
▫ Leaf litter screen	Exercise	Surveying for small terrestrial frogs
▫ Nightwalk	Exercise	Surveying flooded trails at night
II. Amazonian insects		
▫ Butterfly net insect survey	Exercise	Using butterfly nets to collect insects and practice insect identification
▫ Light trap & Shannon trap night survey	Exercise	Using light attractants and other bait to collect and identify insects
▫ Ant behavior and identification	Exercise	Experimenting with resource competition, data collection & specimen identification
III. Tree climbing	Exercise	Learning to ascend and descend small, medium and emergent trees
<i>MODULE 3 QUIZ</i>		

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TOPIC OF STUDY	ACTIVITY	DESCRIPTION
Module 4: Primate Ecology and Noninvasive Sampling		
I. Primates at the Los Amigos Biological Station	Lecture	
▫ Tracking primates by vocalizations	Exercise	Recognizing vocalisations and testing your echolocation skills to census primates
▫ Radio Telemetry, part 2	Exercise	Using radio telemetry to find and follow collared tamarin groups
II. Primate Behavior		
▫ Behavioral Follows (focal and scan samples)	Exercise	Conducting half-day follows of primate groups: sunrise - midday & midday - sunset
▫ Feeding platform stakeouts	Exercise	Staking out baited sites, collecting ad lib behavioral data on feeding ecology
<i>MODULE 4 QUIZ</i>		
Module 5: Viewing the Amazon through Different Lenses		
▫ Wildlife excursion to the Conservation Concession	Trip	Boat safari up and down Los Amigos river
▫ Canopy tower exploration	Hike	Observe the forest from a 60m high tower at the field site
▫ Mammal clay lick visit	Trip	Boat ride across Los Amigos river and hike to a mammal clay lick
▫ Animal tracks	Exercise	Learn animal tracks and how to collect track-based data
▫ Oxbow lakes	Hike	Visits to the Anaconda Lake and Giant River Otter Lake
Module 6: Independent Projects		
▫ Planning expeditions		An exercise designed to allow students to pursue research in whichever field that interests them, using creativity and common sense to identify testable hypotheses, collect appropriate data, and analyze them. Results will be presented to the group as a whole.
▫ Data collection		
▫ Presentation of results		

Independent Study Project:

In addition to completing the above course modules, each participant will design their own independent study, which they will carry out and present to the class at the end of the course. The design and implementation of an independent study will require a curiosity about natural phenomena, critical thinking skills, careful study design, dedication to data collection, and the ability to communicate findings: these are skills the instructors will take pains to provide you with

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during your course. Despite this guidance, it is your responsibility to propose a project idea to your instructors half way through the course, finish data collection a few days prior to the end of the course, and prepare a brief presentation of your findings for the last day of the course. You will also turn in a short document that includes an introduction, methods, results and discussion of your project. This document is NOT an added step in the assignment, rather it will help you organize your project logically and effectively for the presentation. In fact, your introduction and methods sections will be used to gain approval for your independent project.

Reading List:

A list of articles you need for this course will be sent to you ~ 2 weeks prior to the course start date. You **do not** need to read the articles prior to arriving at the station, as reading time is factored into your course itinerary. If you absolutely require that articles be printed to be read by you, printing is your responsibility. If not, bring them on your computer or tablet and join us in maintaining a minimal footprint for this course.

Grading:

At the end of this field course, all students that acquire a passing grade of 60% will receive a formal Certificate of Completion for the course. This certificate will include a list of the techniques you have learned and a personalized overall assessment of your competency in carrying them out. Overall grades for the course are determined as follows:

Attendance (being present at all activities)	20%
Citizenship (enthusiasm, eagerness to learn, good team work, ability to share)	20%
Quizzes	30%
Independent project	30%
<i>Certificate of completion for grade above:</i>	<i>60%</i>

A few certificates of excellence will also be awarded to deserving students in each course.

Scholarly integrity:

It is expected that all exams and assignments reflect only the work of the student whose name appears on the document. The use of another's word, whether published literature or another student's answer, on any assignment or exam, will result in the loss of a course certificate. In instances where credit is being awarded by other institutions, any evidence of cheating will be reported to the appropriate authority at that institution.