

BIO 3040: Neotropical Ecology (2 units)

Point Loma Nazarene University

Spring 2020, Quad II

Instructors of record: Dr. Mike Mooring (mmooring@pointloma.edu, x2719)
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Guest instructor: Dr. Jimi Valiente-Neighbors (jvalient@pointloma.edu, x3001)

Days, times, location: Thursdays 5-6 pm, Latter 11

Required reading: *Tropical Nature: Life and Death in the Rain Forests of Central and South America*, Forsyth, A. and K. Miyata. 1995, Charles Scribner's. (ISBN-10: 0684187108)

Recommended reading: *Monkeys are Made of Chocolate: Exotic and Unseen Costa Rica*, Ewing, J. 2005, Pixyjack. (ISBN-10: 0965809811)

“But now ask the beasts, and they will teach you; and the birds of the air, and they will tell you; or speak to the earth, and it will teach you... that the hand of the Lord has done this.” Job 12:7-9

“Sometimes when uncertain of a voice in its very loudness, we catch the missing syllable in the echo. In God and Nature, we have voice and echo.” From Henry Drummond, *Natural Law in the Spiritual World*.

Catalog course description

A field oriented course that introduces students to the ecology and biology of the New World Tropics. The course begins during the spring semester, and continues with a 10-day field immersion trip to Costa Rica in early May. We visit some of the most intense biodiversity hotspots in Central America. Through readings, lectures, student presentations, and field trips, we explore the plants and animals of the tropics and investigate the ecological and cultural complexities of conserving them. Relevant issues of culture, language, public policy, and stewardship will also be covered. Offered Spring 2020; Prerequisite: BIO 2011

Course summary

The course meets weekly during the second spring quad followed by a mandatory trip to the montane cloud forest and lowland rain forest of Costa Rica. Learning will take place on campus as we read and discuss assigned readings and student presentations. Students will write an essay on a topic of their choice due before the final exam. In Costa Rica, learning will continue both in the field and in classrooms. While the academic focus is on Neotropical ecology, issues of culture, language, development, and environmental stewardship will also be covered. Students are required to keep a detailed journal throughout travel in Costa Rica. Final grades will be assigned according to the following criteria: (1) attendance and participation in weekly meetings in the US, (2) quizzes and exam on assigned readings, (3) quality and originality of topical essay, (4) group presentations, (5) attitude and teamwork in Costa Rica, and (6) quality and completeness of journal.

Course learning outcomes

By the end of this course, students will be able to

- describe the tropical biome and some of its ecosystems;
- explain many of the biotic and abiotic interactions of tropical ecosystems;
- discuss what faithful stewardship of tropical ecosystems entails;
- demonstrate an expertise in a particular topic related to Neotropical ecosystems.

Evaluation and grading

The total course is worth 440 points. Each requirement is described in detail below.

Tropical Nature quizzes (90 points). Three open-book quizzes will be due before the class meeting on the dates listed below. Quizzes are open-book, but each student must do his/her own work. 30 pts each.

Group presentations (50 points). In pairs, students will give two 15-minute presentations the following topics: (1) a species of mammal, bird, reptile, amphibian, or marine organism that we are likely to encounter in Costa Rica, and (2) a topic that explores conservation and interactions between people and their environment in Costa Rica, such as ecotourism, sustainable farming, protected areas, or biological corridors. Presentations should be well organized using Power Point and all partners must contribute equally to preparing and delivering the presentations. A rubric will be provided. 25 points each.

Topic paper/presentation (50 points). Students will write a 5-page paper (12-pt font, Times New Roman, double-spaced) and give a short PowerPoint presentation during the final two weeks of class. The paper and presentation will focus on a topic of interest to the student that overlaps what we will experience during the field trip to Costa Rica. During the field trip, students will have an opportunity to write a one-page update based on their personal observations in Costa Rica. A rubric will be provided, topics must be approved.

Final exam (100 points). There will be an open-book / pen notes, 90-minute exam during finals week, which will be focused on *Tropical Nature*, lecture materials, and student presentations.

Travel journal (100 points). Students are required to keep a travel journal and an entry is required for specific days of the trip specified in the “journal learning schedule”. Entries will include reflections on (1) personal experience, (2) cultural observations, (3) biological observations, and (4) spiritual reflections. Each entry should be at least 1 page in length and written neatly (so the instructors can read it). Biological observations should be summarized at the end of the journal into a species list of the mammals, insects, amphibians, reptiles, birds, marine organisms, and plants encountered during the trip. The journal should also include ecosystem-level observations of various biotic and abiotic interactions. Your final journal entry will be an evaluation of the course with questions provided at the end of the trip. Journals are to be handed at end of our travel.

Attitude and teamwork (50 points). The close quarters and long hours of a study abroad experience demand that all students work together to get along and pull their share of the load. A gracious and hard-working attitude will be required for this course to be a success. The instructors reserve the right to dock students up to 50 points from their final grade for a poor attitude or work ethic. Commit to a good attitude and work ethic and these will be easy points to earn.

Attendance and participation

Because we have so little time to prepare for the trip, attendance at and participation in all weekly meetings on campus is required. Students will be penalized 10 points for each unexcused absence, along with forfeiting any presentation points for that week. Participation in the trip to Costa Rica and all activities in-country is also required. While in Costa Rica, each student will prepare and lead a 20- to 30-minute devotional/reflection time for the group. If you wish, one of the instructors will help you prepare and lead the devotion/reflection.

On-campus schedule (Thursday 5-6 pm, Latter 11)

* Note that additional readings may be required to prepare for class on these days.

Date	Activity	<i>Tropical Nature</i> reading
March 5	Dr. Mooring: Jaguar and apex predators*	Chapters 1-5
March 12	Dr. Cho: Tropical Marine & Coastal Ecosystems	
March 19	Dr. Jimi: Environmental Sociology	
March 26	Team presentations: Biodiversity*	Chapters 6-11
April 2	Easter break	
April 9	Team presentations: Conservation & people	
April 16	Integration Day-Mooring, Cho, Jimi*	Chapters 12-17
April 23	Student projects #1	
April 30	Student projects #2	
May 7	Final exam week	
May 11	Depart San Diego for Costa Rica	
May 21	Return from Costa Rica to San Diego	

Costa Rica Schedule

May 11:	Fly to San Jose, arrive morning of May 12
May 12-14:	QERC, San Gerardo de Dota
May 15-16:	Hacienda Barú, Dominical
May 17-19:	Proyecto Campanario, Osa Península
May 20:	Return to San Jose, stay at Hotel Aranjuez
May 21:	Return flight to San Diego

PLNU INSTITUTIONAL POLICIES



PLNU Mission: To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

PLNU Attendance and Participation Policy: Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. See [Academic Policies](#) in the Undergraduate Academic Catalog.

PLNU Academic Honesty Policy: Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See [Academic Policies](#) for definitions of kinds of academic dishonesty and for further policy information.

PLNU Academic Accommodations Policy: While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic accommodations. At PLNU, these students are requested to file documentation during the first two weeks of the semester with the Academic Support Center (ASC), located in the Bond Academic Center. This policy assists the University in its commitment to full compliance with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Section 504 (a) prohibits discrimination against students with special needs and guarantees all qualified students equal access to and benefits of PLNU programs and activities. Once the student files documentation, the ASC will contact the student's instructors and provide written recommendations for reasonable and appropriate accommodations to meet the individual learning needs of the student. The PLNU Disability Resource Center (DRC) can be reached by phone at 619-849-2486 or by e-mail at DRC@pointloma.edu. See [Disability Resource Center](#) for additional information. For more details, see the PLNU catalog [Accommodations](#). Students with learning disabilities who may need accommodations should also discuss their needs with the instructor.

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Successful completion of this class requires taking the final examination on its scheduled day. The final examination schedule is posted in this syllabus on the following pages. No requests for early examinations or alternative days will be approved unless you have 3 final exams scheduled on the same day or another compelling reason.