Tropical Ecology-Costa Rica
2022 BSC2362C
May 16 - 26, 2022

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COURSE PREFIX AND NUMBER: BSC 2362

COURSE NAME: Tropical Ecology

This is a lower division course designed to evaluate the uniqueness of increasingly threatened tropical forests. Emphasis will be on the New World tropics, including dry, moist, and wet forests. The course is organized into three major parts. A third of the course emphasizes abiotic features that give rise to tropical forests, their physical structure, and gap dynamics. Another third focuses on plant/animal interactions critical to the functioning of tropical communities. The final third examines the social, economic, and political issues affecting tropical forest use, conservation, and management. One major goal of the course is to make students aware of the importance of tropical forests, how they affect the lives of North Americans, and the global consequences of tropical deforestation. A second major goal is to improve the student's ability to clearly articulate scientific arguments in writing, to be able to find pertinent, up-to-date data, and to critically evaluate original scientific literature.

This course will introduce you to the major ecosystems of the world's tropical regions, the fundamental ecological principles at work in these systems, the current threats facing each major ecosystem and the prominent conservation approaches for countering these threats. Specific topics are detailed in the schedule below. The course opens with an introduction to the tropics, where tropical habitats are located, and the climatic conditions that maintain them and some of the ecological processes most important in the tropics. We then transition to a series of discussions dedicated to the major ecosystem formations in the tropics. We will study the worldwide distribution, characteristic flora and fauna, and most pressing conservation issues relevant to each ecosystem.

STUDY ABROAD APPLICATION REQUIREMENTS

Approval for participation in the program is subject to the participant:

- Being 18 years old or older, or duly admitted and registered as a dual enrolled high school student. *
- Being in good academic standing at the time of application (cannot be on academic warning, probation or suspension).
- Being enrolled for credit in an approved Study Abroad program course.
- Interviewing with program's lead faculty member.
- Being approved by the Center for International Programs. Paying all deposits and fees according to the fee schedule.
- Obtaining all immunizations required by the Centers for Disease Control (CDC). In addition, participants are strongly encouraged to get all immunizations and preventative treatments recommended for Costa Rica and regions through which they will be traveling. Please visit the following link for what is advised for travel to Costa Rica.

* Participation as a dual enrolled student is subject to approval of this application and an interview conducted by the program's lead faculty member or designee, as well as any stated prerequisites or additional eligibility requirements.

MEETING INFORMATION/ATTENDANCE POLICY:

There will be two predeparture meetings before departure to Costa Rica. The first will be March 11th for familiarization with the program, class structure, travel arrangements, and participants. It will also be for your introduction to predeparture assignments.

The second meeting will be May 5th for final plans, departure checks, roommate assignments and rooms, and any last-minute plans.

No meeting may be missed, so please be sure to be at each one. I will be sending out notices of meeting locations. All meetings will either be at the Clearwater or Tarpon Springs Campus.

The program plan for this class (class meetings and activities, etc.) meets or exceeds the requirement of 47 contact hours for the course.

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COURSE OBJECTIVES:

Major Learning Outcomes:

1. The student will understand the ecological and evolutionary forces that shape tropical ecosystems.
2. The student will demonstrate an understanding of common native plants and animals found in a Neotropical country.
3. The student will understand the scientific methodology and research as it relates to the study of tropical/related systems and organisms associated with them.

4. The student will understand the anthropogenic influences on tropical systems.

Course Objectives Stated in Performance Terms:

1. The student will understand the ecological and evolutionary forces that shape tropical ecosystems by:
   a. describing the abiotic factors that influence organisms and the adaptations necessary to tolerate various environmental conditions.
   b. delineating biotic factors that determine the distribution and abundance of tropical plants and animals.
   c. identifying selected tropical ecosystems and explaining how they are formed and maintained.
2. The student will demonstrate an understanding of common native plants and animals found in a Neotropical country by:
   a. describing the classification hierarchy for selected tropical species.
   b. participating in field observations of typical tropical groups including:
      1. epiphytes such as orchids, bromeliads, ferns, palms and cacti.

2. insects such as scarab beetles, pollinators and morpho butterflies.
3. amphibians and reptiles such as tree frogs, poison dart frogs, boa constrictors and mimetic forms.
4. birds such as toucans, parrots, flycatchers, and hummingbirds.
5. mammals such as monkeys, bats, agoutis and coatis.
6. native plant species such as Cecropia, Walking Palms, Strangler Figs, and various species of tropical plants.
    a. observing population interactions including commensalism, predation, parasitism, competition, and mutualism.

3. The student will understand the scientific methodology and research as it relates to the study of tropical/related systems and organisms associated with them by:
    a. preparing field notes.
    b. assessing scientific information and writing a research paper.
    c. conducting field observations, research, or analysis.
    d. comparing disturbed and undisturbed habitats.
    e. describing the impacts of agricultural systems
4. The student will understand the anthropogenic influences on tropical systems by observing altered sites within tropical systems in comparison to undisturbed sites.
    a. measuring levels of diversity changes within and between sites in comparison to standard levels of expected diversity.
    b. describing the effects of human encroachment on tropical systems.

Criteria Performance Standard:
Upon successful completion of the course the student will, with a minimum of 70% accuracy, demonstrate mastery of each of the above stated objectives through classroom measures developed by individual course instructors.

PREREQUISITES (IF APPLICABLE):

None

GRADING:

- Field Work/participation/volunteering =30%
- Presentations (in Costa Rica) =30%
- Journals =20%
- Quizzes =20%

·100%

Assignments will be discussed prior to departure at the required pre-departure meetings.
You will a journal for the trip. The following is the required journal.
Rite in the Rain 393 All-Weather Journal Spiral Notebook, 4 5/8" x 7", Product Code: RITR-393.

ACADEMIC HONESTY:

St. Petersburg College has an Academic Honesty policy. It is your responsibility to be familiar with the policies, rules, and the consequences of violations. Read about the policy at: **http://www.spcollege.edu/webcentral/admit/honesty.htm.** There is no tolerance for cheating and academic dishonesty. Discipline can range from a zero on that specific assignment to expulsion from the class with a grade of F. Note that copy/pasting published information, whether it's from your textbook or the Internet, without citing your source is plagiarism and violates this policy. Even if you change the words slightly, the ideas are someone else's, so you still must cite your sources. Cheating, plagiarism, bribery, misrepresentation, conspiracy and fabrication are defined in Rule 6Hx23-4.461, Student Affairs: Academic Honesty Guidelines, Classroom Behavior.

TEXTBOOK INFORMATION:

No textbooks are required for this course. All materials will be provided online to participants.

ASSIGNMENTS:
Subject Matter Expert/Presentations
You will become an expert in one area of the tropics. You are to select and thoroughly research an approved topic related to the tropics of Costa Rica. You will be our group "expert" on this subject. You will develop a 30-minute presentation for the group on your subject to present while in Costa Rica. You may select your presentation media (Power Point, Word, etc.) and develop a presentation for the group. Computers will be available while in Costa Rica. You also will serve as the expert whenever your topic comes up and answer questions related to this topic. To get ideas for a topic, peruse the general books on reserve and recent issues of Ecology, Biotropica, Journal of Tropical Ecology, Oecologia, and Trends in Ecology and Evolution. An outline of the presentation and a first draft are required before the trip. No assignments will be taken after the given deadline. You must be ready to present at any time while in Costa Rica, since topic presentation will be decided by events that occur on the trip. NO CREDIT WILL BE GIVEN FOR PLAGIARIZED WORK (i.e., taking credit for the work of others, whether the work that of another student, or the work of a published author).
Here are some examples:

Examples of Specific Topics (not all inclusive)

Nutrient cycling
Forest structure
Gap phase regeneration
Maintenance of plant diversity
Forest animals
Species diversity –Hypotheses
Pollination systems
Herbivory – impact on plant defenses
Seed dispersal and seed predation
Defense against predation
Indigenous populations and forest use
Value of tropical forests
Causes of tropical deforestation
Consequences of forest destruction
Forest fragmentation / conservation

Field Work

You will participate in all activities and will be graded on your level of participation. Pay attention at all times, show respect for all guides and speakers, and be respectful of your environment. You are required to take all meals with the group, interact as required, and follow all directions as given. If we are doing something, you will be involved.

Journals

You will keep a journal with entries for each day. I will be collecting the journals the second to last day and review what you have designated your two best entries. I will still take a look at all entries, but the two indicated entries are what most of your grade will be based on. See this link for how to journal in the natural sciences-Journaling.

Quizzes

You will have 2-3 informal quizzes on content within the class.

TIPS FOR SUCCESS:

1. 8 Quick **Study Abroad Tips**. Have you made the decision to **study abroad** but you don't know how to prepare? ...
2. Review your trip **abroad** with the State Department.
3. Stay a well-informed world traveler.
4. Do your homework. Review your country and class materials
5. Pack light and smart. Don't bring anything you don't need. And minimize your electronics.
6. Keep a journal. Required
7. Set a weekly budget. Review the college's cost, and then what you will be required to spend in country. Then budget for the junk you want to bring home…
8. Get an International Student ID Card (ISIC).

ITEMS TO PACK:

PACK LIGHT!!!!!
Everybody packs different, so here is a site to help you pack.
Packing for the Tropics

STUDENT CONDUCT / ALCOHOL AND DRUG POLICY:

Please refer to important information about student conduct and related policies in your study abroad application package.

EMERGENCIES/HEALTH & SAFETY:

Please refer to important information in pre-departure orientation materials.

LINK TO DEPARTMENT OF STATE ADVISORY FOR STUDY ABROAD DESTINATION(S):

Costa Rica-State Department

This information is subject to change; please check this source again as departure time nears.

SPECIAL ACCOMMODATIONS:

If you anticipate requesting of the Learning Specialist an accommodation for a **documented** disability, it is important to notify the International Programs office as soon as possible that you plan to make a request. Please also make an appointment with the Learning Specialist on campus to make your request as soon as possible. The Learning Specialist can be reached at 791-2628 or 791-2710 (CL), 341-4758 (SP/G), 394-6108 (SE), 712-5789 (TS), or 341-4532 (AC).

Description of cultural immersion activities and additional excursions

All activities on the trip are part of the study abroad program. There will be opportunities to engage in additional activities such as special meal arrangements, side trips as a group, and additional tour offerings. These will not be part of the trip and are not required-but will be offered to enhance the trip's purpose. Costs of these activities are the responsibility of the traveler, and not part of the tour price. In addition, tipping is required for meals and tour guides. So, budget for these activities.

Suggested safety precautions and arrangements.

Although it is not required by the CDC, four inoculations are recommended when traveling to Costa Rica and it is strongly suggested that all participants acquire them: measles, updates on all required vaccines, hep A, and Typhoid.

The lead faculty member on the trip will carry emergency safety supplies appropriate for the environment and first aid care.

In addition, specifics regarding safety in an unfamiliar environment are covered in participant orientation, including the Study Abroad Emergency Checklist. This checklist covers knowing where to go in emergencies (how to get there, transportation options), emergency contact information (home and local) and contact numbers (local 911 equivalent, embassy, police, hospital, etc.), back-up plans, special conditions, emergency kits, and cash reserves and alternatives. Closer to the time of travel, current safety conditions can be obtained from the State Department via the Internet. All participants are required to carry international health insurance that covers $100,000 accident/sickness coverage, including evacuation and repatriation of remains that will be included in your trip fees.

Schedule
Day 1: Fly to Costa Rica
Arrive in San José:
Touch down in San José, the Costa Rican capital.
Dinner: Enjoy your first meal together as a group. From this point on, you'll enjoy breakfast, lunch, and dinner together every day.
Day 2:
San José | Tortuguero
Braulio Carrillo National Park:
Founded in 1978, this park was built to preserve
the wildlife of the area, from jaguars and ocelots to quetzals and eagles. Take in views of the dense overhanging plants, nearby valleys, and volcano craters.
Boat ride to Tortuguero:
Founded in the 1930s by Colombians exporting sea
turtles and coconuts, Tortuguero Village today is accessible only by boat and home to just 700 residents. Begin your visit with free time in Tortuguero Village, gateway to Tortuguero National Park.
Day 3: Tortuguero
Tortuguero National Park:
Visit Tortuguero National Park, the most important
Caribbean breeding ground for the green sea turtles who have lived here for more than 100 million years. Next, explore the twists and turns of the Tortuguero Canals on a boat excursion. High rainfall, a convergence of fresh water, and the Caribbean Sea make the beaches, canals, lagoons, and wetlands of Tortuguero

areas of exceptional biodiversity. See if you can spot a howler monkey, toucan, or maybe even a caiman.

Day 4: Tortuguero | Sarapiquí region

Travel to the Sarapiquí region:

Make your way to the Sarapiquí region, a county in the Heredia province known for its lush rainforests, outdoor activities, and incredible array of flora and fauna. Keep a lookout for the endangered green macaw, who makes its home here.

Sarapiquí canopy tour:

See the rainforest like never before on your canopy tour. Strap into your safety harness and glide from platform to platform through the treetop greenery. As you ride down a zip line, you'll get a bird's-eye view of the breathtaking world around you. If you're lucky, you can spot some of the area's indigenous wildlife, including monkeys, caymans, crocodiles, and iguanas. Those who opt not to participate in the canopy tour will enjoy free time in the Sarapiquí region.

Day 5: Sarapiquí region | Arenal region

Whitewater rafting:

Join an optional whitewater rafting excursion. Take in the Arenal region's beautiful scenery when you traverse quieter river segments. Then, feel the spray of the rapids as you paddle your way through. Those who do not participate will enjoy free time in the Sarapiquí region.

Travel to the Arenal region:

As you continue to the Arenal region, watch for the tremendous cone that emerges from the green hills of Alajuela—the mile-high Arenal Volcano. Overlooking the San Carlos plain and the Pacific lowlands, the Arenal Volcano has been active for the past 7,000 years.

Hot springs:

Take a dip in the area's relaxing hot springs. These pools are naturally heated by thermal energy from the nearby volcano.

Day 6: Arenal region

Kayak on Lake Arenal:

The Arenal Volcano serves as a watershed for Lake Arenal, which you'll see up-close on a kayaking excursion. Glide across the rippling blue water to hidden coves and lagoons. Be sure to keep an eye to the sky—more than 400 species of bird fly overhead here.

Afternoon in town

Day 7: -Arenal Region

Hike to La Fortuna Waterfall:

Lace up your walking shoes and hike through thick forest vegetation to the spectacular La Fortuna Waterfall. Surrounded by tall, green cliffs, this 200-foot cascade churns the aqua pool below.

Day 8: Arenal region | Guanacaste

Rincón de la Vieja National Park:

This morning, along the way to Guanacaste,
you'll explore Rincón de la Vieja National Park and learn about the area's remarkable array of plant and animal life. Located high in the mountains, this rain and cloud forest boasts numerous geothermal hot springs. The highlight is the Blue Lagoon; its color and name come from the minerals in the stones beneath the lagoon, which is fed by a giant waterfall.
Guanacaste:
As you arrive in Guanacaste, take in the craggy bluffs cloaked in
forests that stretch above you. Along these roads you're bound to encounter local cattle ranchers driving oxen carts farther inland.
Day 9: Guanacaste
Snorkeling:
Watch for sea turtles, colorful corals, and all sorts of interesting and
unusual marine life as you snorkel through Guanacaste's clear Pacific waters.
Palo Verde National Park:
This park is home to one of the last tropical dry
rainforests in Central America, and many different bird species flock to its lush trees and marshlands. See how many you can spot as you explore the grounds.
Day 10-
Palo Verde boat tour:
Get a whole new perspective on the diverse wildlife of this
region on an eye-opening boat tour. Look for monkeys, crocodiles, and more as you cruise the Tempisque River.
Day 11: Depart for home
Transfer to the airport and check in for your flight home.