Tropical Conservation Semester

GALAPAGOS • ANDES • AMAZON

Program Information Packet

Ceiba

Foundation for Tropical Conservation

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GENERAL INFORMATION

Program Overview

The Tropical Conservation Semester: Galapagos, Andes, and Amazon (TCS) undergraduate program in Ecuador offers in-depth training in tropical conservation and applied ecology. This unique program combines internships with conservation organizations, coursework in conservation biology of terrestrial and marine ecosystems, and immersion in Latin American culture. Offered by the Ceiba Foundation for Tropical Conservation in partnership with the University of Wisconsin, this program is ideal for students in both biological and social fields that seek interdisciplinary training in international conservation. Participants will enroll in the following sequence of courses:

1) Tropical Ecology, Ecosystems, and Evolution (4 cr.)
2) Marine Biology of Coastal and Reef Ecosystems (4 cr.)
3) Conservation Biology and Global Sustainability (3 cr.)
4) Spanish Language and Latin American Culture (3 cr.)
5) Internship in Conservation & Community Development (2 cr.)

Students travel throughout Ecuador together with faculty, and spend over half the semester at field sites that exemplify the diversity of tropical habitats and the efforts to conserve them. We explore the tundra-like páramo and lush cloud forests of the Andes, delve into the complexity of the Amazon rain forest, and immerse ourselves the living treasures of the Galápagos Islands.

Each student is paired with a host family in Quito with whom they reside over the course of the semester. You begin with a month of intensive Spanish language training on the campus of the Universidad San Francisco de Quito (USFQ). Coursework continues at numerous field sites, and covers natural history, adaptation and evolution, research methods, ecosystem management, biological monitoring, and conservation theory and practice. Spanish language is taught by USFQ staff, while instruction in ecology and conservation is provided by TCS faculty.

During the final month of the semester, each student conducts an internship or research project with an Ecuadorian conservation or development organization. Students may work on an ongoing program, or develop a new project jointly with the host organization. Opportunities include protected areas management, reforestation, biological monitoring, environmental education, or community development. The internships will allow students to apply what they have learned in their coursework and language training to gain first-hand experience in international conservation work.

The TCS program provides a special opportunity to travel to exotic and fascinating places, with astounding biodiversity and a rich and varied culture very different from our own. Participants in the Tropical Conservation Semester will acquire a thorough knowledge of the ecology of the world's richest habitats, gain valuable language skills and cultural awareness, and obtain practical experience in conservation. Such an opportunity is a life-changing and eye-opening experience!

Ceiba Foundation

The Ceiba Foundation for Tropical Conservation is a U.S. non-profit organization dedicated to community-based conservation of biodiversity and ecosystem services in the tropics through environmental education, scientific research, local capacity building and establishment of nature reserves. Our projects emphasize empowering individuals and communities to become active participants in the management and preservation of their lands for future generations.

Since 1999 Ceiba has offered rigorous field courses in tropical ecology and conservation. These programs provide students with increased awareness, hands-on experience and scientific knowledge of tropical ecosystems that will inspire and equip them to tackle current and future conservation challenges. We take students out of the classroom and immerse them in some of the richest ecosystems on earth, providing exposure to the complex social and biological factors influencing their conservation. Visits to our reserves and other conservation projects give a realistic picture of the biological, sociological and economic complexities underlying conservation issues. To learn more, visit **ceiba.org** or write:

Ceiba Foundation
301 S. Bedford Street, Suite 7A
Madison, WI 53703
courses@ceiba.org

Ceiba
Foundation for Tropical Conservation

Universidad San Francisco de Quito

USFQ is a private liberal arts college founded in 1988. The modern campus is situated in Cumbayá, on the outskirts of Quito, and is attended by over 4,000 students, from Ecuador and around the globe. USFQ manages a Galapagos campus on San Cristobal Islands, as well as the Tiputini Biodiversity Station in the Amazon rainforest.

GENERAL INFORMATION

Tuition, Prerequisites, and Credits

The TCS program is offered every Spring semester. Tuition includes most meals, and all lodging and travel to field sites within Ecuador. Some of these locations rank among the most sought-after destinations in the world, including the Amazon rainforest and the Galapagos Islands; Ceiba works hard to control the cost of visiting those sites, but we believe that visiting such locations is worth the added expense compared to programs which do not explore such spectacular destinations. Note that tuition does not cover pre-course expenses, textbooks, travel to and lunch on campus, nor University of Wisconsin processing fees. Students will want to bring additional funds for personal items, snacks, laundry services and gifts. See Traveling to Ecuador and How to Apply for other important information.

Current program dates, tuition information, and application deadline are available online at **ceiba.org/tcs**. For additional details on tuition fees, financial aid, and the application process please contact Ceiba (**courses@ceiba.org**) or the UW - Madison International Academic Programs Office (608-265-6329, **peeradvisor@studyabroad.wisc.edu**, **studyabroad.wisc.edu**).

Prerequisites

This program is designed for upper-level undergraduate students with at least one prior college-level biology or ecology course (Zoology, Botany, Biology, Environmental Studies, or similar) and maintain a 2.5 undergraduate GPA. You must be able to swim by the start of the program. Graduate or continuing students seeking practical experience in international conservation also are welcome to apply. The Tropical Conservation Semester is open to students from any US or Canadian college or university.

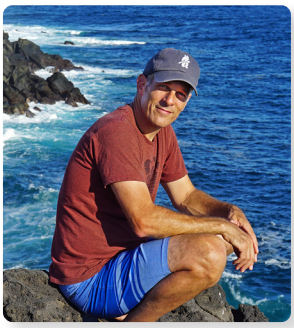
Accreditation

Students completing the Tropical Conservation Semester receive 16 upper-level credits; several courses also are honors-level. Details on each course are available in this program packet, or in syllabi available on our website and provided at the start of the program. The TCS program is fully accredited by the University of Wisconsin for students from any U.S. college or university. If applying from outside the U.S., we are happy to work with you to ensure you obtain full credit for the program through USFQ, which has partnerships with over 70 academic institutions worldwide.

Program Faculty

Joe E. Meisel - Professor

Dr. Meisel holds a Ph.D. in zoology from the University of Wisconsin and an M.S. in wildlife ecology and conservation from the University of Florida, and is a board member and vice-president of Ceiba. He has worked in Central and South America for over 30 years, studying the effects of habitat alteration on native and migratory birds and evaluating the impact on tropical wildlife of land use conversion. He has led numerous summer and semester field courses in Panama, Costa Rica, and Ecuador, has worked in Panama with the Smithsonian Migratory Bird Center, and is the author of *Orchids of Tropical America: An Introduction and Guide*, and a new book on marine fishes, both for Cornell University Press. His research interests include the foraging behavior of Neotropical army ants and ant-following birds in forest fragments, the dynamics of wildlife in fragmented landscapes, and GIS modeling of species and diversity distributions.



Catherine L. Woodward - Professor

Dr. Woodward holds a Ph.D. in botany from the University of Wisconsin and an M.S. in tropical botany from University of Florida. She also is the current president of Ceiba. She has conducted research and traveled extensively in Ecuador and throughout Latin America for over 30 years. For her master's degree she studied soil disturbance effects on tropical tree seedling growth in reforested areas along the Maxus oil company road in Yasuní National Park. Her current research interests include the impacts of forest fragmentation on plant population genetics and reproduction. She has worked with the Smithsonian Tropical Research Institute in Panama, conducting field research on birds in forest fragments, and has taught field courses in Costa Rica, Panama, Belize, and Ecuador. As a professor at the University of Wisconsin, she has won numerous teaching awards.

COURSE DESCRIPTIONS

Spanish and Latin American Culture

The opening course of the semester provides customized instruction for mastery of Spanish grammar and conversational skills. Each student is placed into either intermediate or advanced Spanish, depending on prior coursework and a placement exam. Classes take place on the USFQ campus for 3 hours per day, four days per week, and are given by credentialed USFQ faculty. The course curricula are designed to advance each student to the next level of their university Spanish language sequence. **3 credits** (4 weeks, 48 hours; *varying levels*).

Highlights

- Learn to communicate effectively in Spanish
- Immerse yourself in Ecuadorian culture
- Interact daily with your Ecuadorian host family

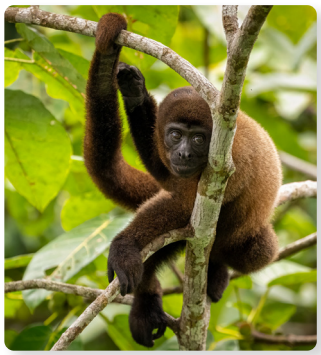
Conservation Biology and Sustainability

Gain a strong foundation in the science and practice of conservation through site visits to a variety of active conservation projects and interviews with conservation leaders in Ecuador. The course runs concurrently with the terrestrial and marine ecology courses, so that conservation problems and approaches are considered simultaneously with the aspects of the basic biology, ecology and natural history of these systems. Examine the synergies among biological, physical, social, and economic drivers of today's environmental challenges, including the biodiversity and climate crises. **3 credits** (10 weeks, 68 hours; *UW Bot/Zoo 651*).

Highlights

- Visit national parks, private reserves, community-based projects, and unique tropical land-use systems
- Witness human impacts and threats to the environment
- Learn ways to conserve species and ecosystems

Tropical Ecology and Ecosystems



Students master complex ecological principles and research skills during this advanced course. Key concepts are presented and compared in the context of the ecosystems we visit: Andean páramo (high-altitutude tropical tundra), montane cloud forests, and pristine Amazon rainforest for two weeks. Lectures and field activities cover the natural history and ecology of major taxonomic groups, their adaptations in each ecosystem, and standard field methods for ecological research; students also learn to identify flora and fauna characteristic of each habitat type. Field work is integral to the course, and includes guided hikes, instructor-led mini-projects and small group research projects. **4 credits** (6 weeks, 110 hours; *UW Bot/Zoo 460*).

Highlights

- Survey amazing wildlife in the Amazon rainforest at the Tiputini Biodiversity Station
- Explore the lush and orchid-rich Andean cloud forest
- Hike above treeline in Andean páramo and stay alert for spectacled bears or condors

Marine Biology of Coasts and Reefs

Study the natural history, ecology and conservation of marine environments while exploring mangroves, rocky and sandy intertidal zones, coral reefs, and the diverse undersea environments of the world-famous Galapagos Islands! Students learn about the unique challenges facing marine organisms, their adaptations, and the profound threats affecting the oceans today during a four week stay in the Galapagos that incorporates a week-long natural history cruise and several weeks at USFQ's Galapagos campus on San Cristóbal island. Homestays with families, and ample opportunities to interact with local residents island offer an unique look at life in this unique archipelago. **4 credits** (5 weeks, 110 hours; *UW Zoo 400*).

COURSE DESCRIPTIONS

Highlights

- Tour the famed Galapagos Islands by boat for 8 days
- Stay with a Galapagan host family for one week
- Study the underwater world while snorkeling

Internships in Conservation and Community Development

Students put the training they have received in the ecology, environment, culture, and language of Ecuador to carry out a conservation or research internship during the last month of the semester. Students form relationships with members of Ecuadorian organizations, providing for a mutually-beneficial cultural exchange, the potential to acquire useful job skills, and a chance to become familiar with careers in conservation and associated organizations. Furthermore, student interns can contribute tangibly as "ambassadors of goodwill" to the efforts of Ecuadorian NGOs and other institutions.

Early in the semester, students contact organizations to investigate internship opportunities. Ceiba maintains a list from which students may select, or students may contact independent organizations. Final placements depend in part on the student's language skills and interests, and the current needs and priorities of host organizations. During the first week of the course students discuss the details of their project with their host organization, including expectations, responsibilities and the work schedule. Students and the individuals who will supervise them each sign an internship agreement form outlining the terms agreed upon.

Students are not expected to develop their own project, but assist where needed within the organization, as requested by their supervisor. In certain cases, a student may design a project or develop an independent project that in some way contributes to the organization's broader goals. The only requirement we have is that all projects must include an outdoor component.

Students must contribute at least 80 hours of volunteer work over the month, and may work a regular schedule (20 hours per week), or irregularly, depending on the project's needs as agreed upon by both the supervisor and the student. Signed internship agreement forms must be obtained from all organizations.

Students will make a short oral presentation to the class, in a professional format, and will produce a final "deliverable." Examples include training manuals, environmental education pamphlets, maps, posters, videos, research data, and website content. are included in the report. Each student will make. Supervisors will submit to course instructors an evaluation of each student's performance while working with their host organization. **2 credits** (4 weeks, 80 hours; *UW Zoo 677*).

Internship Opportunities

Below is a sampling of some internship organizations with which a student may work, and the kinds of opportunities they offer.

Bellavista Reserve
Cloud Forest Conservation

Ceiba Foundation
Protected Areas Planning & Management
GIS Mapping & Analysis
Forest Measurement and Monitoring
Water Quality & Human Health
Environmental Education

Centro Jambatu & Wikiri SapoParque
Amphibian Conservation & Research

Mashpi Sustainable Chocolate
Community Farming, Environmental Education

Merazonia
Wildlife Rehabilitation & Reintroduction

La Hesperia
Cloud Forest Conservation & Sustainable Agriculture

Sumak Allpa Primate Rescue Center
Primate Conservation and Rehabilitation

Tropical Herping
Reptile & Amphibian Conservation

Expedition Destinations

The course begins in Quito, Ecuador's capital city, which occupies a broad inter-Andean valley at an altitude of 9,250 feet. The city has a modern center and an historic Spanish colonial district and is surrounded by volcanoes, including the active Mt. Pichincha which last erupted in 2002. Classes are held just outside Quito in the town of Cumbayá, where the lower elevation makes for a pleasant, warm climate.

Upon arrival in Ecuador, you settle in with your Ecuadorian host families and begin the first month of classes in Spanish and Conservation Biology on the Universidad San Francisco de Quito campus in Cumbayá. USFQ is Ecuador's most prestigious private university, and operates both the Tiputini Biodiversity Station and Galapagos campus. It hosts study abroad programs from around the world, creating an exciting international atmosphere on its campus. We've limited classroom study mostly to Monday through Thursday, a schedule allowing for extended class field trips each weekend that introduce students to tropical ecosystems and some of Ecuador's most stunning scenery.

An early expedition will be to **Cayambe-Coca Ecological Reserve** dominated by one of Ecuador's tallest volcanoes, Antisana (5,705 m; 18,717 ft). The towering crater attracts climbers from around the world, while the wind-swept park protects a vast area (400,000 ha) of high-elevation alpine tundra, or "páramo." We break out our sweaters, hats, gloves and wool socks to spend a day hiking through and studying the unique adaptations of the rich biota that thrives in this harsh but breathtaking habitat. We also will tour the **Antinsana Ecological Reserve**, winding around the flanks of that majestic mountain as we scan the skies for soaring condors and search the mountainsides for elusive spectacled bears.

Another multi-day trip takes us to the **El Pahuma Orchid Reserve**, a project of the Ceiba Foundation, providing technical expertise and training to the landowner and his family so they may continue to manage their land in a sustainable and non-destructive manner. High in the epiphyte-laden Andean cloud forests (1,900 – 2,400 m), El Pahuma showcases a breathtaking diversity of native orchid species and is a model project in conservation and ecotourism. Students have the opportunity to learn first-hand about reserve management and protected areas implementation. From El Pahuma we travel to the **Bellavista Cloud Forest Reserve**, a sprawling conservation project that protects and restores high-elevation forests rich in wildlife. Bellavista has made headlines with record-setting Christmas Bird Counts, and by the discovery of a new specis of arboreal mammal, the nocturnal olinguito, a raccoon relative that regularly comes to fruit feeders. Rugged hikes take us though pristine forest and therough remote canyons, where hiking in the stream tests our rubber boots! Here we study this cloud-fed montane ecosystem, and have a chance to see rare denizens of this forest such as the colorful Blue-winged Mountain-Tanager and endemic Plate-billed Mountain Toucan. We also walk the ancient Yumbo trail, once used as a trade route by pre-Colombian peoples to transport goods from Quito to the coast and back.

After a return to Quito, the excitement continues as we journey to Ecuador's Amazon rainforest for a two week stay at the **Tiputini Biodiversity Station**. We travel by plane, open-air bus, and motorized canoe to immerse ourselves in the primeval rainforest of TBS, located adjacent to the 1.7 million acre Yasuní National Park and surrounded for miles on all sides by the most biodiverse forest on Earth. Students have the opportunity to see rare rainforest mammals, including 10 species of primates, jaguar, ocelot, puma, capybara, agouti, tapir, and tayra, fascinating river dwellers such as the pink river dolphin and caiman, and over 500 species of birds, including giant harpy eagles, toucans and macaws. To maximize our encounters with wildlife we explore blackwater rivers and freshwater lagoons. We climb TBS's canopy access tower early in the morning for a unique bird's-eye view of the forest canopy, and the throngs of birds, monkeys and other wildlife that carry on their lives high above the forest floor.

WHERE WE GO

Lectures in the Amazon provide essential background on tropical rainforest structure and dynamics, tropical flora and fauna and ecological interactions, with field activities geared toward learning techniques for ecological research. We then focus on many of the problems confronting conservation of tropical rainforests, including some particularly applicable to this region: oil development, colonization, and tourism. We may encounter the Huaorani people, original inhabitants of this lowland rainforest, and witness the forces that are endangering their culture and the forest they depend on. There is ample opportunity to hear from the staff and biologists working at TBS, a scientific hotspot for researchers from around the world. You'll then put your training into action by designing and executing your own field project in this incomparable rainforest.

After returning from the rainforest, we dive right into the Marine Biology course, and set sail to the famed **Galapagos Islands Marine Reserve**. Legendary for its role in inspiring Darwin's theory of evolution, this archipelago of 13 major islands and 115 smaller ones is a virtual showcase of diversity and speciation. One of the world's largest marine reserves surrounds the park, although conservation, tourism and fishing often come into conflict. You will enjoy face-to-face encounters with Galapagos wildlife during our 7-day cruise of the islands, seeing unspoiled wilderness and snorkeling multiple times per day from the comfort of a luxury yacht. Then we settle in on San Cristobal island, where the USFQ island campus will be our academic home and classroom for the last few lectures of the semester. To cap our Galapagos adventure, you will design and carry out a field research project studying marine biology, fisheries impacts, or the effects of tourism on local residents. All the while, you will enjoy a once-in-a-lifetime experience of living with a native "Galapagueña" host family.

Back in Quito, there won't be much time for relaxation as you present the results of your research in a student symposium and make last-minute preparations for your internship. This final month of the program is your chance to demonstrate all you've learned and to really practice your Spanish! Depending on the organization and internship you choose, you may return to the El Pahuma reserve to work with Ceiba on cloud forest conservation, mapping, environmental education or research. Or, you may travel to a remote site to assist another organization with marine conservation, community development or sustainable agriculture projects, or wildlife rehabilitation. Whatever the case, it is up to you to make the most of your internship experience and we're certain that both you and the organization with whom you work will benefit. Furthermore, the internship can help you acquire new skills and contacts, and give you practical exposure to careers in international conservation.

The semester wraps up with a few days in Quito during which you share your internship experiences and bid farewell to your classmates and host family before returning home, or moving on to your next tropical adventure! For more information and photos of the sites we explore, please visit **ceiba.org/tcs**.

WHERE WE GO


GALÁPAGOS
San Cristobal
El Pahuma
Quito &
Cumbayá
Cayambe-Coca
& Antisana
Tiputini
ECUADOR

PROGRAM SCHEDULE

Program Schedule

The program begins in mid January and ends in mid May. Exact dates for each year are available on Ceiba's website and in your enrollment packet. Expect the program schedule to be rigorous: we take full advantage of your time in Ecuador, and the exciting field sites we visit. The chronogram below indicates the approximate sequence of activities each week.

Students settle in with their host families and receive orientation in Quito upon arrival, and Spanish classes begin the first full week on campus. Classes normally take place Monday through Thursday for 5 - 6 hours per day: 3 hours of ecology or conservation lectures in the morning, and 3 hours of Spanish in the afternoon.

Trips to field sites occur over weekends, or over multiple week days, and entail extended periods living and working together as a group, sometimes in rugged conditions.

The very nature of field courses and travel in Latin America necessitates a certain degree of flexibility, and the final course itinerary may differ from the one below. Lecture topics may change opportunistically in response to an interesting observation in the field or the presence of a visiting scientist. Activities may change in response to weather, unexpected delays or other unpredictable circumstances.

TCS Schedule-at-a-Glance

Spanish & Culture | Conservation Biology | Terrestrial Ecology | Marine Ecology | Internship

Activities by Week	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Arrival & Orientation																			
Ecuador Cultural Introduction																			
Spanish Language & Culture																			
Terrestrial Ecology																			
Amazon Rainforest																			
Conservation Biology																			
Galápagos Cruise																			
Marine Biology																			
Galápagos Islands																			
Conservation Internships																			
Wrap-up & Departure																			

Traveling to Ecuador

Air Transportation to Ecuador

Students must make their own international travel arrangements for arriving in Ecuador on or before the course start date. Several major airlines serve the international airport in Quito, Ecuador, including American Airlines, Avianca and COPA (through Miami), Continental (through Houston), Delta (through Atlanta), and United (through Chicago). Student airfares occasionally are available. We don't book a single flight for all participants, in case you want to stay longer and explore more of South America!

Arrival in Ecuador

After buying your ticket, please submit your travel itinerary on the **UW study abroad website**. If you arrive on the suggested arrival date, your host family and/or a program staff member will meet you at the airport and take you to your home-away-from-home.

Air Transportation in Ecuador

Air travel between Quito and Coca for our trip to the Amazon rainforest, and between Quito and Baltra for our tour of the Galapagos is included in the program tuition. Please be aware that passengers are allowed to check a maximum of only 40 pounds (20 kg) of luggage, plus a small carry-on bag. Please plan accordingly when you pack for your trip! One way to minimize the impact of this limitation is to pack heavier items in your carry-on bag and check only your clothes.

Passport

You must have a passport valid for **6 months beyond** your stay in Ecuador. If you do not have a passport, or need to renew yours, contact your local U.S. passport office or post office for an application. Apply early, as it may require six weeks or more to process. To apply for a passport you need to submit:

1) Two passport-sized photos
2) Certified birth certificate
3) Photo I.D.

Visa

You do not need to obtain a special visa for your semester in Ecuador. All students will simply request a Tourist Visa at the airport upon your arrival. This visa *should* be granted for 180 days, but most often the airport Immigration officers will only give you 90 days. Once those three months expire, USFQ staff will work with the Ecuadorian immigration office extend your tourist visa by an additional 90 days. Ecuador has a habit of switching the rules at the last minute, however, so prepare to be flexible and patient!

Customs

When entering Ecuador you must pass through customs ("migración"). It is possible that your luggage will be searched. Possession of illegal drugs or other contraband will result in your arrest and expulsion from the course without refund. Penalties in Ecuador for possession of even small amounts of illegal drugs are much more strict than in the US. Upon your return, you will pass through US customs that maintains specific restrictions on what can and cannot be brought into the country (e.g., animal parts like feathers or butterfly wings are prohibited). Please visit the U.S. customs service website for more information.

Health and Safety

The health and safety of participants in our program is of primary concern, and we take every precaution to ensure that the potential for accidents is minimized. However, you will be living and travelling in an environment that may feel very unfamiliar and it is up to each individual to exercise caution, good judgment and common sense. The following information is provided to enhance your safety and enjoyment during your semester abroad.

As a developing nation Ecuador does not have the same high standard of sanitation we enjoy in the U.S. and Europe, and there are certain diseases and ailments that are more common in developing tropical countries against which one must take proper precautions. If basic precautions are followed, however, it is very unlikely that you will become seriously ill.

Altitude

The city of Quito is at 9,350 feet (2850 m) of elevation, and some field sites we visit are as high as 14,500 feet. Altitude sickness, your body's response to lower oxygen concentration at high altitudes, can affect anyone and is characterized by headache, fatigue, dizziness, trouble sleeping and occasionally stomach upset. If you know you are prone to altitude sickness, consult your physician. Prescription drugs now are available that mitigate the negative effects of altitude when taken before traveling to high elevation. In any case, you can minimize the symptoms of altitude sickness by drinking plenty of water before and after your arrival, avoiding alcohol and caffeine, taking aspirin and iron supplements, and avoiding overexertion.

INFORMATION FOR APPLICANTS

Covid-19

The health and safety of our students and instructors, and of the host families and staff with whom we interact, are Ceiba's top priority. Students, staff, and host families are required to be fully vaccinated against Covid-19 prior to arrival in Ecuador. Testing may be required before some in-country travel. We continue to stay fully informed about the situation in Ecuador, and will adjust protocols and travel plans as necessary. Please consult the **Centers for Disease Control** for treatment and vaccination details, the **US State Department** for updated travel requirements, and Ceiba's webpage on **Health & Safety information**.

Vaccinations

The best way to prevent the most serious illnesses is by getting vaccinated before traveling to Ecuador. It is mandatory that you obtain a yellow fever vaccine prior to arriving in Ecuador (you will be required to show proof of this vaccine in order to travel to Tiputini). You should check that your vaccinations against tetanus, typhoid fever and hepatitis A and B are up to date.

It is recommended that you take anti-malaria pills for your visit to the Amazonian region of Ecuador. Tablets are taken once a week and must be started prior to your departure and continued after your return (specifics vary by medication). Anti-malaria pills are difficult to obtain in Ecuador, so please bring a complete supply with you. Malaria, dengue and leishmaniasis — all insect-borne illnesses — have been known to occur in Ecuador. The best way to avoid contracting these illnesses is to limit contact with the insects that transmit them: wear long pants and sleeves, apply insect repellent and sleep under a good mosquito net.

For any and all medical advice, please consult your doctor or public health service for the most recent information regarding vaccinations for travel to Ecuador.

Medical Insurance

All participants in Ceiba study abroad programs are required by the University of Wisconsin to have medical insurance that covers them during their travel and stay overseas. Fortunately, enrollment through UW guarantees you access to the excellent CISI (Cultural Insurance Services International) insurance program which provides coverage for international healthcare and medical assistance. CISI also partners with Assist America to provide worldwide 24/7 assistance through their Team Assist Plan (TAP). Enrollment in the CISI program is provided for all study abroad participants, and the cost is included in your program fees. Visit **studyabroad.wisc.edu** for details.

Motion Sickness

During the cruise of the Galapagos, we sleep and eat aboard ship for a week. Because of the lengthy travel between islands, you will spend a considerable amount of time on the ship. If you know, or even suspect, that you are prone to seasickness, please bring a supply of anti-motion-sickness tablets (or other remedy). This is extremely important: you do not want your Galapagos experience spoiled by preventable motion sickness, so be sure to come prepared.

Personal Safety

Although Ecuador is part of the developing world, you will find Quito to be surprisingly modern. While Quito has a lower crime rate than most comparable cities in the US, like any large urban area (now over 2 million people) there is some street crime. Being alert and exercising common sense is essential. Travel after dark only in groups, avoid poorly-lit or isolated areas, don't display large amounts of cash or jewelry, take care with cameras and backpacks, and do not accept invitations of any kind from strangers. If you feel endangered, enter the nearest business and ask them to call a taxi, or the police. Familiarize yourself with the city, ask course staff or your host family about the safety of unknown neighborhoods, and let a friend know where you are going and when you expect to be back. Pick pocketing is the most common form of crime, so when traveling on buses and other public transportation, do not let your possessions out of your sight, or better yet, keep them on your person.

These are all precautions that any seasoned traveler, or resident of any large US cities, will already have adopted. This advice is not intended to scare you; Quito is a wonderful city full of warm, generous and honest people; the Ecuadorian countryside also is a terrific place to travel, and you will find the locals you meet everywhere are friendly and polite. However, as in your own city or town, knowing the risks and how to manage them is the first step to staying safe.

WHAT TO BRING

Textbooks

You are not required to bring textbooks with you to Ecuador for the semester program. Readings will provided in print or digital formats as part of the course content in Ecuador. The program library will have copies of the course texts listed below, although you are welcome to rent or buy your own.

Castro, P. and M. Huber. 2019. *Marine Biology* (11th edition). McGraw Hill Education.

Jackson, M.H. 1997. *Galapagos: A Natural History* (revised edition). University of Calgary Press.

Kricher, J. 2011. *Tropical Ecology*. Princeton University Press.

Sher, A. and R. Primack. 2022. *An Introduction to Conservation Biology* (3nd edition). Sinauer Associates.

Suggested Readings

Below is a list of recommended readings by category. We suggest that students read at least one book from each of the first two categories before the course begins. Readings will enhance students' understanding of course material and deepen knowledge in other subject areas. The field guides are useful for identifying the plants and animals we will encounter. There will be copies of each field guide in the program library.

Terrestrial Ecology & Conservation

Blalick, M. and P. Cox. 2020. *Plants, People, and Culture: The Science of Ethnobotany*. CRC Press.

Forsyth, A. and K. Miyata. 1984. *Tropical Nature: Life and Death in the Rainforests of Central and South America*. Charles Scribner's Sons.

Kane, J. 1996. *Savages*. Vintage Books.

Kricher, J. 2017. The New *Neotropical Companion*. Princeton University Press.

Sapp, J. 2016. *Coexistence: The Ecology and Evolution of Tropical Biodiversity*. Oxford University Press.

Terborgh, J. 1999. *Requiem for Nature*. Island Press.

Marine Ecology & Conservation

Clover, C. 2008. *The End of the Line*. Univ. California Press.

Ellis, R. 2003. *The Empty Ocean*. Shearwater Books.

Norse, E.A. and L.B. Crowder. 2005. *Marine Conservation Biology: The Science of Maintaining the Sea's Biodiversity*.

Pauly, D. and J. Jacquet. 2019. *Vanishing Fish: Shifting Baselines and the Future of Global Fisheries*. Greystone Books.

Sobel, J. and C. Dahlgren. 2004. *Marine Reserves: A Guide to Science, Design and Use*. Island Press.

Galapagos Islands

Darwin, C. 1909. *Voyage of the Beagle*. Penguin Classics.

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Phone Apps

We are increasingly using phone apps for fieldwork and identification, all of which are useful in the US as well. Consider installing **Merlin** (guide to birds by photo and sound, also works offline), **iNaturalist** (for plant and animal identification), and **eBird** (for bird identification and registering lists) on your phone.

WHAT TO BRING

Required Gear & Clothing

Daytime temperatures in Quito and Cumbayá range from cool 60s at night to the low 80s by day. High-elevation sites will greet us with chillier climates, reaching the 50s by night at El Pahuma, and even the 40s during day trips to the páramo. Lowland sites are quite warm (80s or, rarely, 90s), and often are rainy; humidity is extremely high, so bring quick drying fabrics to prevent molding and trash bags to keep clothes dry! The Galápagos are very warm, and more casual - shorts and flip-flops are common attire for nearly everyone.

- 2 flashlights (we recommend one head lamp and one hand-held flashlight; at least one should be strong for night walks)
- 2 large trash bags for keeping luggage dry
- Binoculars (good ones!)*
- Daypack or fanny pack (big enough for carrying water, field notebook, camera, rain gear, lunch)
- Decent clothes to wear in Quito (Ecuadorians tend to dress better than Americans; although you do not need fancy attire, it is uncommon to wear shorts in the city, and you may not be allowed into some city establishments without slacks)
- Hat or cap
- Non-aerosol insect repellent (25% DEET is sufficient)
- Lecture notebooks and pens/pencils
- Lightweight, long-sleeved shirts for field work and at night
- Lightweight, long pants for field work (thin cotton or quick-dry nylon)
- Mask, fins and snorkel ('mini-fins' are acceptable, but fins are very difficult to purchase in Ecuador)
- Quick-dry towel
- Raincoat or poncho (you WILL get rained on!)
- Rubber boots (mid-calf to knee high – may purchase sizes less than men's 11 cheaply in Ecuador)
- Shoes suitable for trail hiking (but heavy boots not necessary)
- Signal whistle
- Small, personal first-aid kit (Band-Aids, antacid/anti-diarrhea, antibiotic ointment, insect bite relief)
- Socks (many!) long enough to tuck your field pants into
- Spare batteries (if obscure type, e.g., for cameras, then can be difficult or expensive to purchase in Quito)
- Swimwear (men must bring one suit with close-fitting liner)
- Sunscreen (SPF 30 or stronger)
- USB drives for saving project files (data, assignments, etc.)
- Warm clothing for Quito and high elevation sites (temperatures may dip below freezing at high elevation!)
- Water bottle (at least 1 liter)
- Water-resistant field notebooks ("Rite in the Rain" or similar)
- Water-resistant wristwatch (preferably with stopwatch & alarm)

* *Binoculars:* A good pair of "bins" is essential. You will use them every day, and will be very disappointed if yours are inadequate. Binoculars are rated by their magnification power and the size of the lens: 8 x 42 is 8-power with 42 millimeter lenses. Smaller lenses are cheaper, but drastically reduce gathered light, making objects dim and colorless. We recommend 8 to 10 power with a minimum 30 mm lens. A good pair can be found for $150 - $300.

Recommended Gear & Clothing

- Biodegradable multipurpose soap
- Camera and plenty of film or memory cards
- Compass (preferably with mirror)
- Contact lens solution (available in Ecuador at 2X cost)
- Hand lens (5 or 10X)
- Laptop (see online FAQ for more information)
- Money belt or concealable pouch
- Motion sickness medication (for bus and plane travel)
- Pocket knife
- Spare prescription glasses or contacts, if you wear them
- Sunglasses
- Rubber sandals and/or flip-flops
- Wet suit, neoprene shirt or rashguard for cool-water snorkeling
- Toiletries, especially specialty items
- Ziplock bags (for protecting binoculars, cameras, snacks, etc.)

Questions?

Visit ***www.ceiba.org/tcs***
or write to ***courses@ceiba.org***

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