

**Woodsworth College and School of Environment
University of Toronto
Summer Abroad 2022 Program in Ecuador
July 4 – July 31**

Tentative Course Outline and Assessment Scheme

**ENV 395Y0 Special Topics Field Course:
Ecology and Conservation in the Amazon, Andes, and Cloud Forest**

Professors Christoph Richter and Barbara Murck

Background:

Ecuador is the smallest of the Andean countries, but it has huge physical, biological, and social diversity. We will examine this by taking extended field trips to three very different parts of the country: The High Andes; the western Amazon Basin; and Cloud Forests on both the eastern and western slopes of the Andes Mountains. We will also have a city tour of historic Quito, visit the Equator, and take a class in traditional Ecuadorian cuisine. This is the 17th year that this course has been offered by the University of Toronto Summer Abroad with our partner, Universidad San Francisco de Quito (USFQ).

High Andes:

The spine of the Andes in Ecuador consists of dozens of volcanic peaks formed by the subduction of the Nazca Plate under the South American Plate. Most of Ecuador's volcanoes are extinct or dormant, but at least eight are still active. We will visit an Indigenous family in the Andes; hike around Chimborazo – at 6268 m, the highest peak in Ecuador and anywhere on the equator; and visit Cotopaxi Volcano, which last erupted in 2016. We will look at treelines and their characteristics; the flora and fauna of the alpine zone; the polylepis forest and páramo environments; and the physiological, cultural, and economic adaptations of the Indigenous Quichua.

Cloud Forest:

When moist air moving inland from the Pacific (in the west) and the Amazon (in the east) hits the Andes Mountains it rises and cools, dropping much of its moisture. This creates tropical montane cloud forests on both slopes of the Andes. We will visit cloud forests on both the eastern and western slopes to see an artisanal coffee and chocolate production, visit volcanic hot springs, take trail walks through the forest, and see many Andean birds, butterflies, and other native animals and plants.

Amazonia:

Ecuador's section of the Amazon Basin, in the province of Oriente, takes up nearly half of the country but has less than 5% of its population. From Coca, the provincial capital, we'll head down the Napo and Tiputini Rivers to the Tiputini Biodiversity Station, a research facility run by the University of San Francisco Quito (USFQ), our hosts in Ecuador. The area is still largely pristine rainforest and is a major biodiversity hotspot. In our week there we will focus on tropical rainforest ecosystems – their richness, structure, and behaviour – and will learn and apply field research skills. We will also look at traditional uses of the forest by the Waorani and other Indigenous groups, and at the consequences of recent exploitation by oil companies, including deforestation and fragmentation, road construction and increased access, and other environmental and social impacts.

Prerequisites: None. We do not assume any common academic background for students taking this course. The majority of our students are typically in EEB, Environmental Science, Environmental Management, or related programs, but it is not necessary to have extensive background in any of these areas.

Recommended preparation: ENV200H1 or equivalent (such as ENV100Y5); and/or BIO120H1 or equivalent (such as BIO152H5). We have had students from many different programs and backgrounds take this course very successfully in the past. If you have an interest in the environment or any of our other course topics, we encourage you to apply.

Course Goals:

Through our course activities, it is our intention to:

- establish a learning community that promotes individual creativity, productive interactions, and mutual support, to facilitate both student learning and personal growth;
- provide opportunities for students to challenge themselves while experiencing the extraordinary and unique environments of the Andes, the Amazon, and the cloud forest;
- expand students' awareness of the relationships among social, political, economic, and environmental issues in fragile and contested situations, within the historical context of Ecuador and South America;
- encourage students to learn about, consider, and engage with diverse cultural values and perspectives on environmental, economic, and social issues in the developing world, including Indigenous perspectives;
- provide opportunities for students to apply classroom-based learning in the real world.

Learning Outcomes:

After having completed this course, you should be able to:

- summarize the unique ecological, geological, and climatological characteristics of the High Andes, the Amazon, and tropical montane cloud forest environments;
- summarize the impacts of human activities on these unique environments, including issues related to tourism; agriculture; waste management; energy use; refugeeism; and resource extraction;
- discuss some of the many challenges facing Ecuador today with regard to conservation; habitat threats; species at risk; invasive species; climate change; and sustainable economic development;
- introduce other class members to a native species of the Andes, the Amazon, or the cloud forest, with which you have become familiar through your research and course work;
- maintain, synthesize, and interpret field observations;
- design and carry out an experimental study in a tropical rainforest environment, including interpretation of the data, with a partner(s), and communicate the results of your study through a report and presentation;
- produce a term paper, in scholarly style, on a topic of your choosing that is relevant to environmental issues in Ecuador; and
- use, without aids, scholarly terminology appropriate to the course content.

Evaluation Scheme (dates are subject to changes depending on travel and other constraints):

Pre-departure assignment (due July 7 – submit online to Quercus)	5%
Amazon Field Project (experiment + report + presentation – various dates)	20%
Andes Field Project (field measurements + assignment – due dates TBD)	10%
Final Test (July 29 at USFQ)	30%
Term Paper (tentatively due August 14 – submit online to Quercus)	35%

The last date to **drop** the course without academic penalty is July 18, 2022.

Tentative Schedule:

The course dates are **July 4-31, 2022**. July 4-8 will be virtual. Students will travel to Ecuador on **July 9** and our in-country activities will begin on July 10; the final day in-country is July 31.

The tentative schedule for the virtual class meetings of July 4-7 will be:

Monday, July 4: Required synchronous class meeting to discuss plans, meet each other, and introduce the course format and topics (two hours, time to be arranged, probably 10 am-noon on Zoom).

Tuesday, July 5 to Friday, July 8: Four pre-recorded lectures of approximately one hour each – watch them on your own time schedule (asynchronous), but please complete them before we leave for Ecuador. We will also hold drop-in virtual office hours to answer any questions that you might have about the course logistics or content.

Thursday, July 7: The Pre-Departure Assignment is due before midnight. Please refer to our Quercus site for more information.

Readings:

Links to reading materials will be available on our Quercus site. There is no reading package or textbook to buy.

Additional Information and Notes:

1. If you took the online version of the Ecuador Field Course in the Summer of 2021 (course code ENV382H0), you are still eligible to take the onsite version of the course – there is no exclusion.
2. In previous years we have visited the Galápagos Islands. Because of escalating costs and travel restrictions, we won't be going to the islands this year. Our plan is to run a separate course next year: ENV396Y0 Field Course in Ecuador: Galápagos Islands and the Coast of Ecuador. It is planned that the course would alternate annually with the Andes-Amazon-Cloud Forest course. There will be no exclusion – if you take the course this year, you will still be able to take Galápagos Islands and the Coast next year with a different course code.
3. Please be sure to come to our Pre-Departure Orientation meeting, explore our course Quercus site thoroughly once it has been published, and read the course guidebook *When in Ecuador 2022* for additional important, detailed course information.
4. Our partner (USFQ) has deep experience managing visits by international student groups. Please visit the Summer Abroad website to learn more about Covid-19 protocols related to this course. If you are required to self-isolate because of Covid-19, you will be supported by USFQ staff but you may incur extra costs if the isolation occurs outside of our normal course dates and activities
5. There is no pre-arranged group flight for the course, but information will be provided to you about a suggested flight. You should plan to arrive in Quito by the evening of Saturday, July 9 (around 8-9 pm is ideal). It would be extremely convenient if everyone could arrive in Quito on the same flight, or within an hour of the arrival time of the suggested flight. If you arrive outside of that time window, you will need to arrange for a taxi or other type of transfer from the airport to our base hotel in Cumbayá. (We'll give you detailed directions.)
6. **Our most valued course members are those who are engaged and enthusiastic, as well as flexible.** We are going to be seeing and doing a lot of really exciting, once-in-a-lifetime things together. But we do a lot of travelling and the conditions are not always perfect – sometimes it's hot or cold, wet or muddy, and sometimes we're pretty tired. We often push ourselves outside of our comfort zones. We especially love students who have a "let's do this!" attitude – who love to learn and want to experience everything. If that describes you, then let's go!