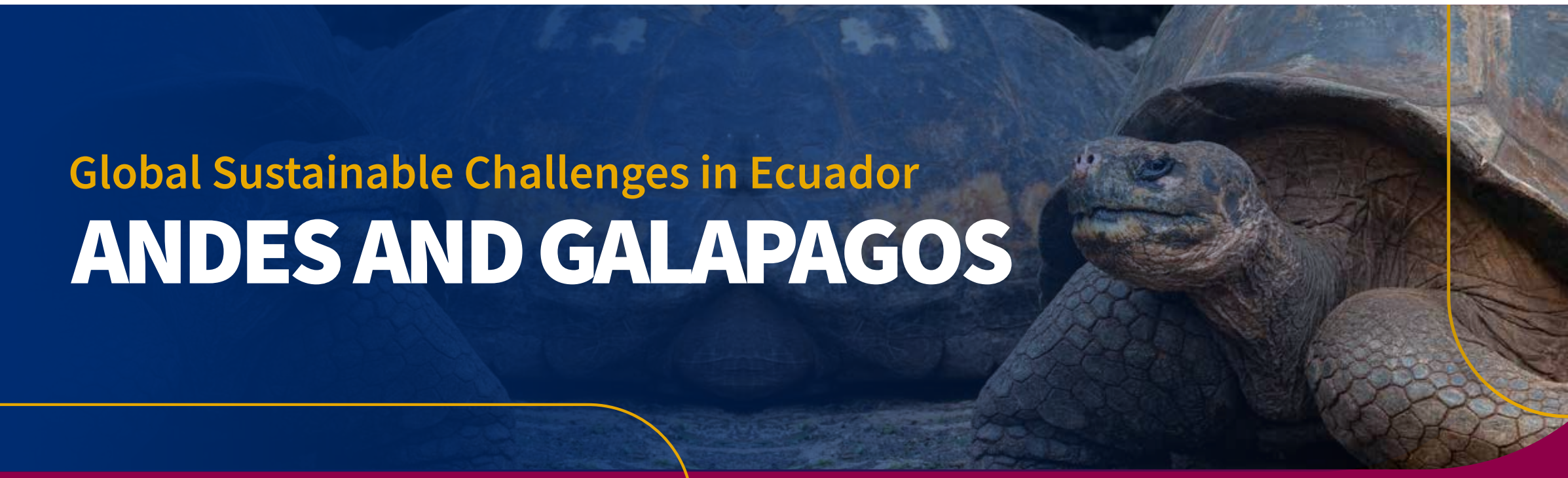
UIDE

Powered by
Arizona State University



Global Sustainable Challenges in Ecuador

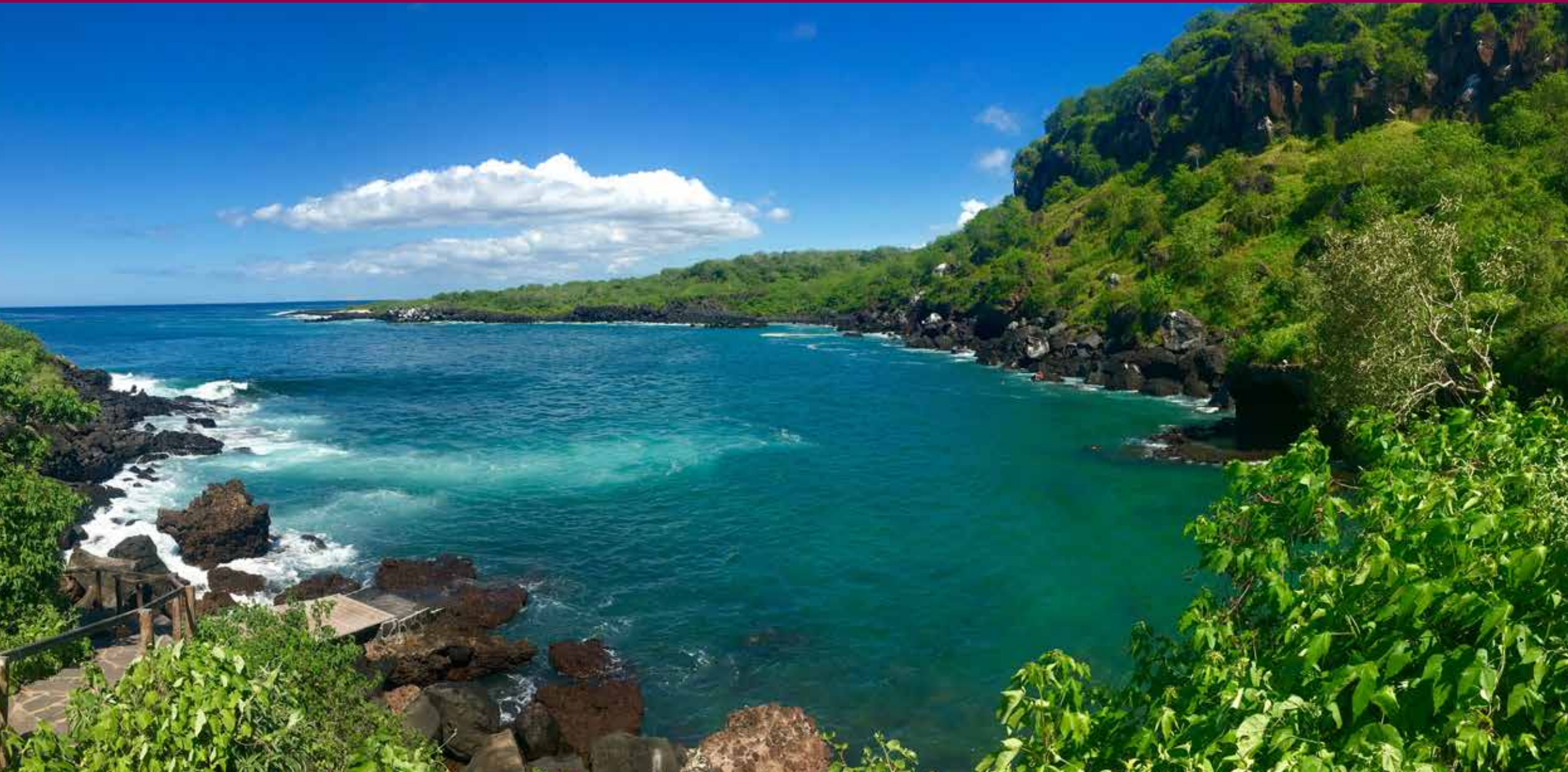
ANDES AND GALAPAGOS

This highly innovative program will take students all across Ecuador: visiting the majestic highlands; exploring the incredibly biodiverse Amazon; and a 5-day excursion to the Galapagos Islands to guide students along Charles Darwin's voyage of discovery and his development of the theory of the origin of species via natural selection.

This course will integrate both social and natural sciences and expose participants to important, real-world applications of the science that they are learning in an environmental and sustainability context. There will be various topics about sustainability that professors will teach, the program will visit and discuss with local scientific experts ongoing issues in climate change, environmental degradation, and conservation efforts in Ecuador.

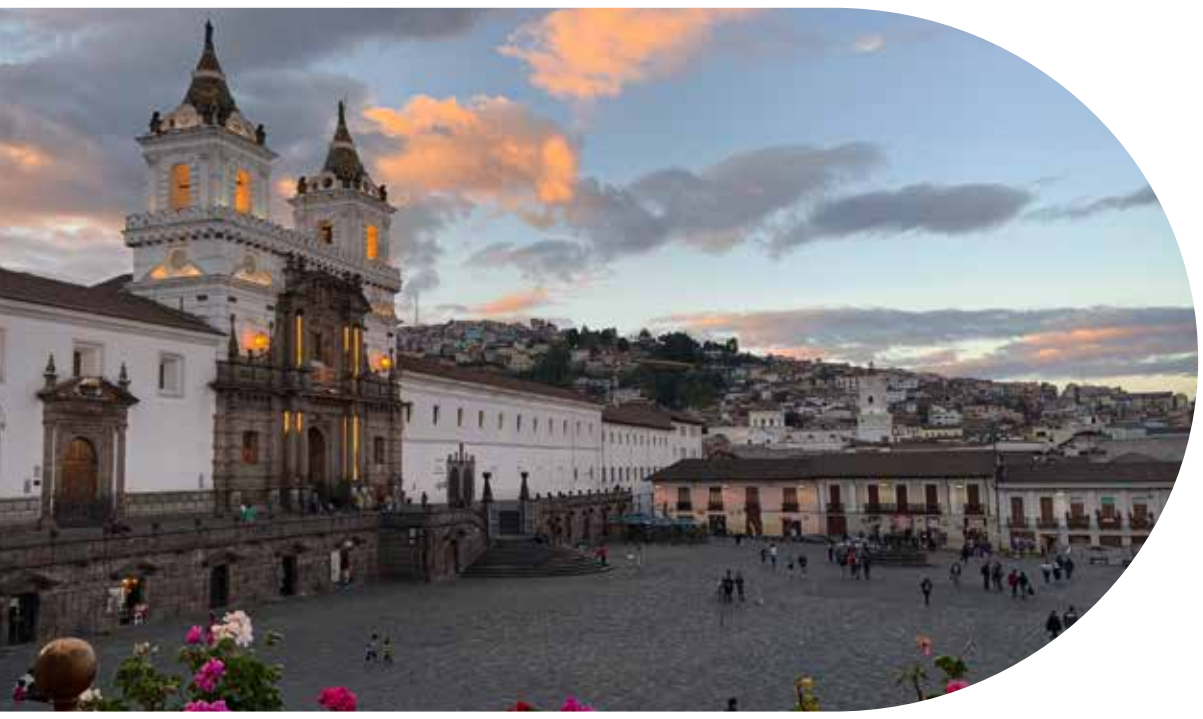
YOUR ITINERARY IN A NUTSHELL

- **Regions in Ecuador you´ll Visit:** Andes and Galapagos Islands.
- **Accommodation:** 7 nights in Quito, 1 night in Mindo and 5 nights in the Galapagos Islands.
- **Experiences:** Academic Lectures, Hands on activities, Walking classrooms, Adventure, Culture, History, Landscapes and Wildlife.



	UIO	UIO	UIO	GPS	GPS	GPS	GPS	GPS	GPS	MINDO	MINDO	COTOPAXI	UIO	UIO
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
6:00	Arrival to Quito													
7:00		Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
8:00		Transport to UIDE	Hotel pick up and transport to Old Town	Transport to Airport	Transport to Torutuga Bay	Transport to Las Pesquerías	Transport to Cerro Mesa	Transport to Las Grietas	Transport to Airport	Transport to Tulipe	Transport to Chocó Andino	Transport to Cotopaxi	Transport to UIDE	Departure to the U.S.
9:00		Lectures: Ecuadorian Culture and History; Sustainable Development; Sustainable Tourism	Old Town Visit Walking Class: Ecuadorian History and Culture	Flight to Galápagos	Tortuga Bay Walking Class	Walking Class and visit to Las Pesquerías	Cerro Mesa and Garrapatero Visit	Kayaking at Los Alemanes Beach and Las Grietas Visit	Flight to Quito		Walking Class: Chocó Andino		Lectures: SNAP National System of Protected Areas; Ecuador and the World: The Challenge of Sustainability	
10:00										Tulipe, Mindo		Cotopaxi Tour		
11:00					Free time at Tortuga Bay	Lecture: Fisheries in Galápagos	Species Count							
12:00														
13:00		Lunch (Included)	Lunch (Included)	Walking Class: Twin Crater	Lunch	Lunch	Lunch			Lunch	Lunch	Lunch	Lunch and Cooking Class (UIDE Gatronomía)	
14:00		Lecture: The Saga of Atahualpa	Transfer to Intiñán	Lunch	Charles Darwin Station and La Ratonera	Waste Management and Recycling Procedures	Transport to Hotel	Lunch	Transport to Hotel	Mindo	Walking Class: Chocó Andino	Cotopaxi Tour		
15:00			Intiñán & Middle of the World Walking Class	Reforestation Forum and Activity			Walking Class: Sustainability	Last Day Results of the Galápagos Visit	Free Day				PaintBall	
16:00		Actividad Recreativa												
17:00	Transport to Hotel					Transport to Hotel				Lecture: Ecuador's Biodiversity	Transport to Hotel		Transport to Hotel	
18:00		Transport to Hotel		Transport to Hotel	Transport to Hotel	Lecture: Environmental Impacts						Transport to Hotel	Free	
19:00	Welcome Dinner	Dinner	Transport to Hotel	Dinner	Lecture: Galápagos	Dinner	Dinner	Dinner and Cooking Show	Dinner (Not Included)	Dinner			Dinner (Not Included)	
20:00			Dinner (Not Included)		Dinner				Free		Dinner (Not Included)	Dinner (Not Included)	Free	

DAY 1



QUITO

- Arrival to Quito and transfer to the Hotel.
- Welcome Dinner.

Overnight: Whyndham Garden Quito

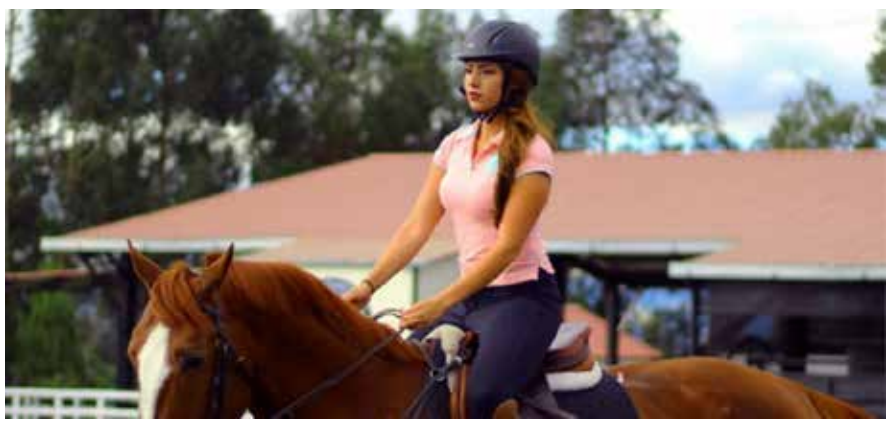
DAY 2

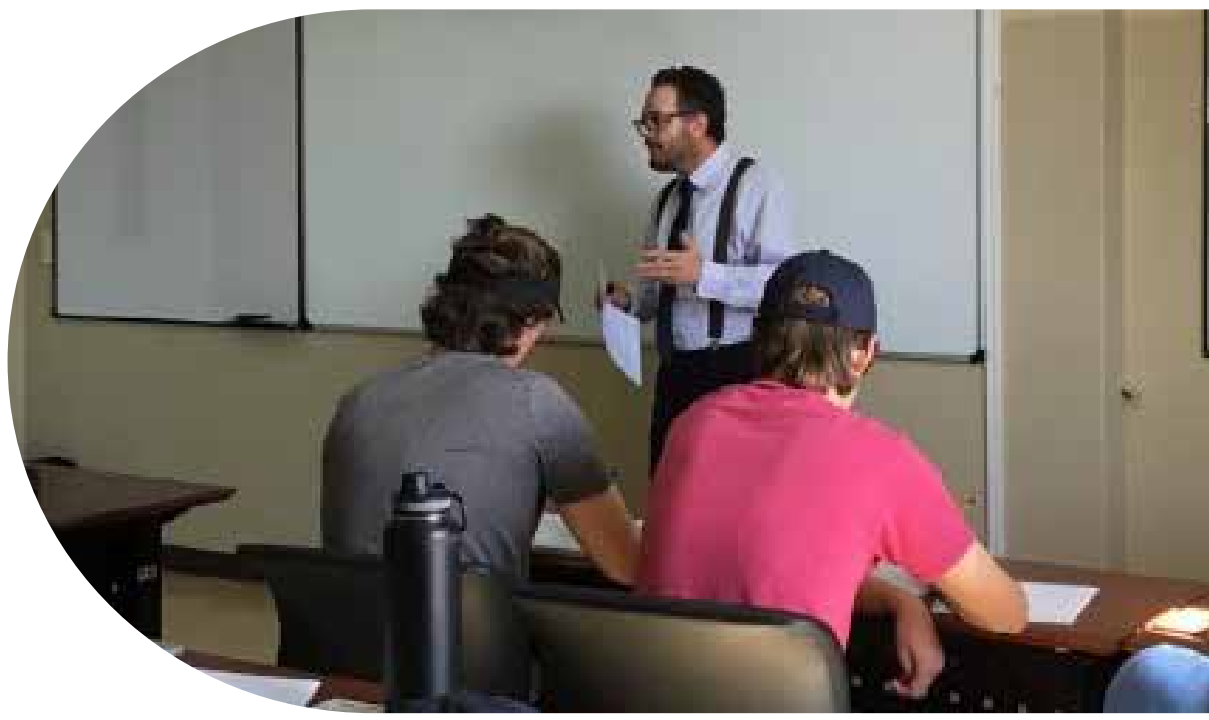
UIDE QUITO

During your first day in Ecuador you´ll visit UIDE and get lectures with our teachers that will tell you all about your amazing journey through Ecuador, you´ll talk about the biodiversity of the country and the history that makes Ecuador such a rich mix of cultures and sceneries.

PAINTBALL / HORSEBACK RIDING

Enjoy the thrill of a paintball fight against your friends, or take things a little slower and relax and learn to ride one of UIDE's horses.





FACULTY LECTURE HOURS: 6 HOURS

Lectures led by: MSc. Cecilia Puertas, MSc. Francis Vivanco and PhD.(c) MSc. Sebastián Donoso, MSc. Mónica Puertas, Msc. Marta Puertas.

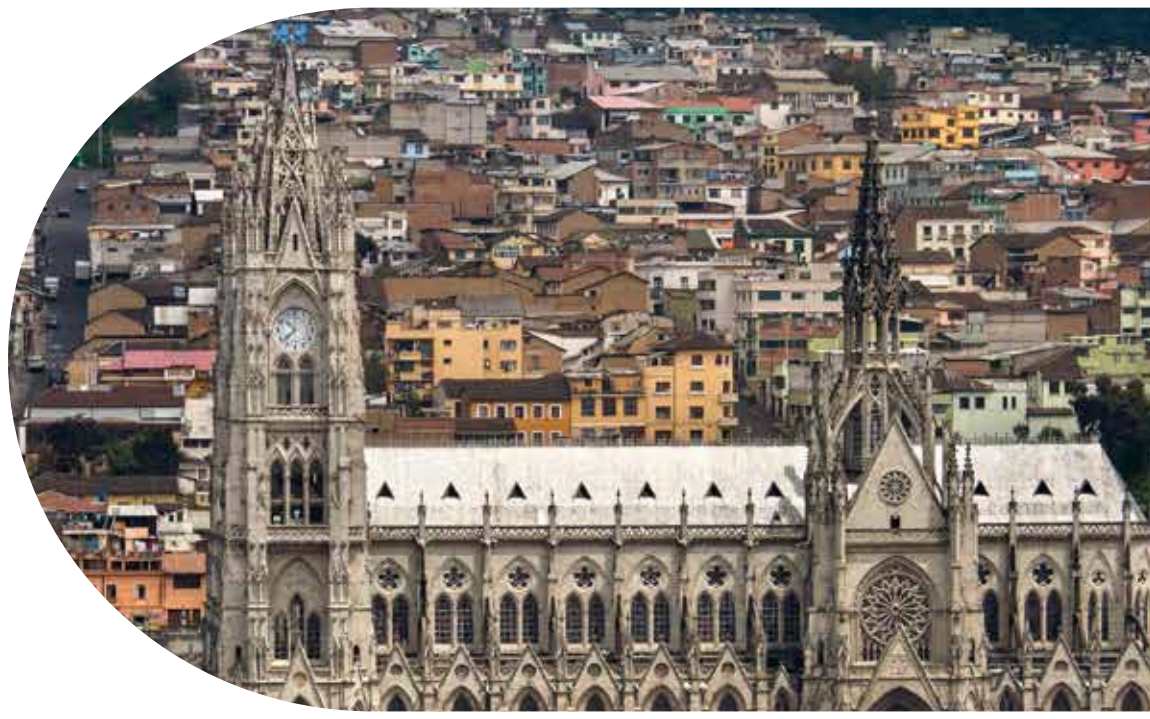
- Ecuadorian Culture & History
- Sustainable Development
- Sustainable Tourism
- The Saga of Atahualpa

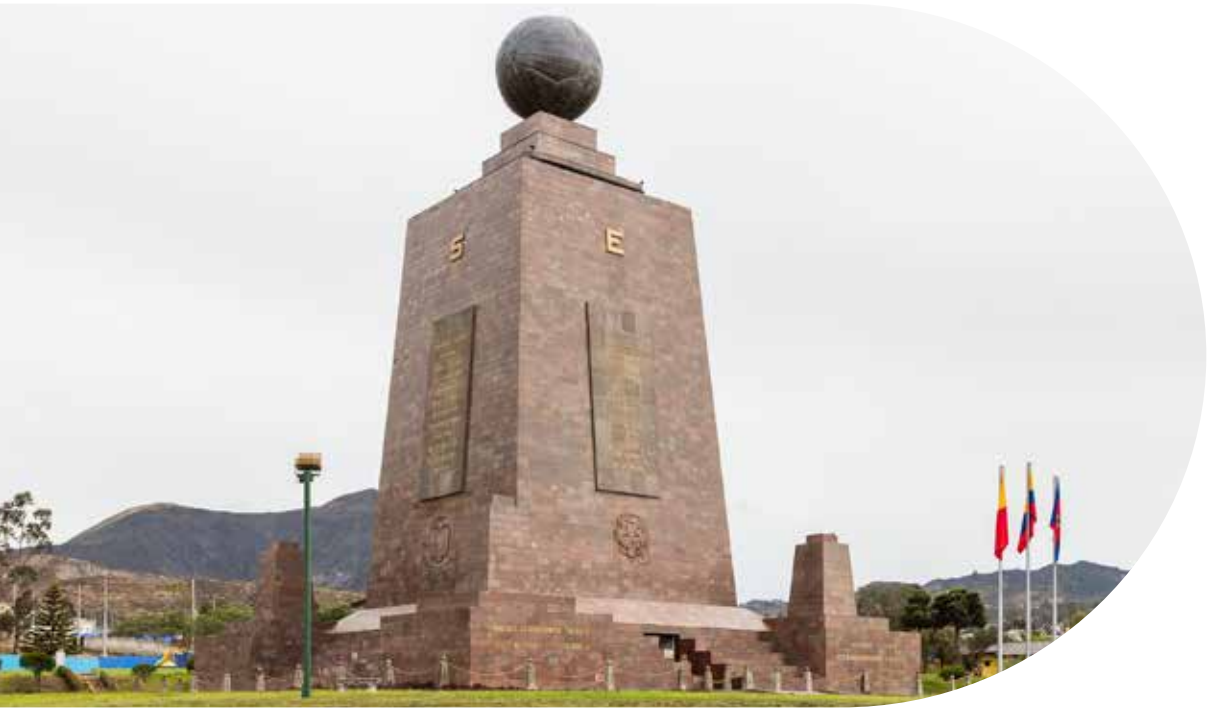
Overnight: Whyndham Garden Quito

DAY 3

OLD TOWN AND THE MIDDLE OF THE WORLD

Enjoy a visit to the best-preserved historic centers in all of Latin America. The narrow streets are lined with centuries-old buildings, and the entire area was declared a UNESCO Heritage Site back in 1978.





Then, get ready to interact with exhibits that demonstrate events that occur only on the equator, you´ll be surprised how different things work here! You´ll visit the Middle of the World.

WALKING CLASSROOM HOURS: 8 HOURS

Led by PhD.(c) MSc. Sebastian Donoso, learn about Ecuadorian history and culture in the capital of Ecuador Quito and submerge yourself in a walking class around the biggest and best well-preserved old town in Latin América.

Overnight: Whyndham Garden Quito

DAY 4

GALAPAGOS - BALTRA - SANTA CRUZ

You´ll have the opportunity to see giant tortoises in their natural habitat - there is nothing better than seeing these giants in the wild.
After lunch, you´ll visit the Twin Craters - empty magma chambers that eventually collapsed resulting in two large holes, this is the habitat of the very clever the carpenter finch, which uses tools to search for food.
Helping out these beautiful islands is very important. So, after a forum to understand why the reforestation is key on the islands, students will plant their own tree helping the restoration of native and endemic plant species.

WALKING CLASSROOM HOURS: 1 HOUR

Led by our private tour guide specialized in the Galapagos, you'll learn about volcanic formations at the Twin craters.

PRACTICE HOURS: 3 HOURS

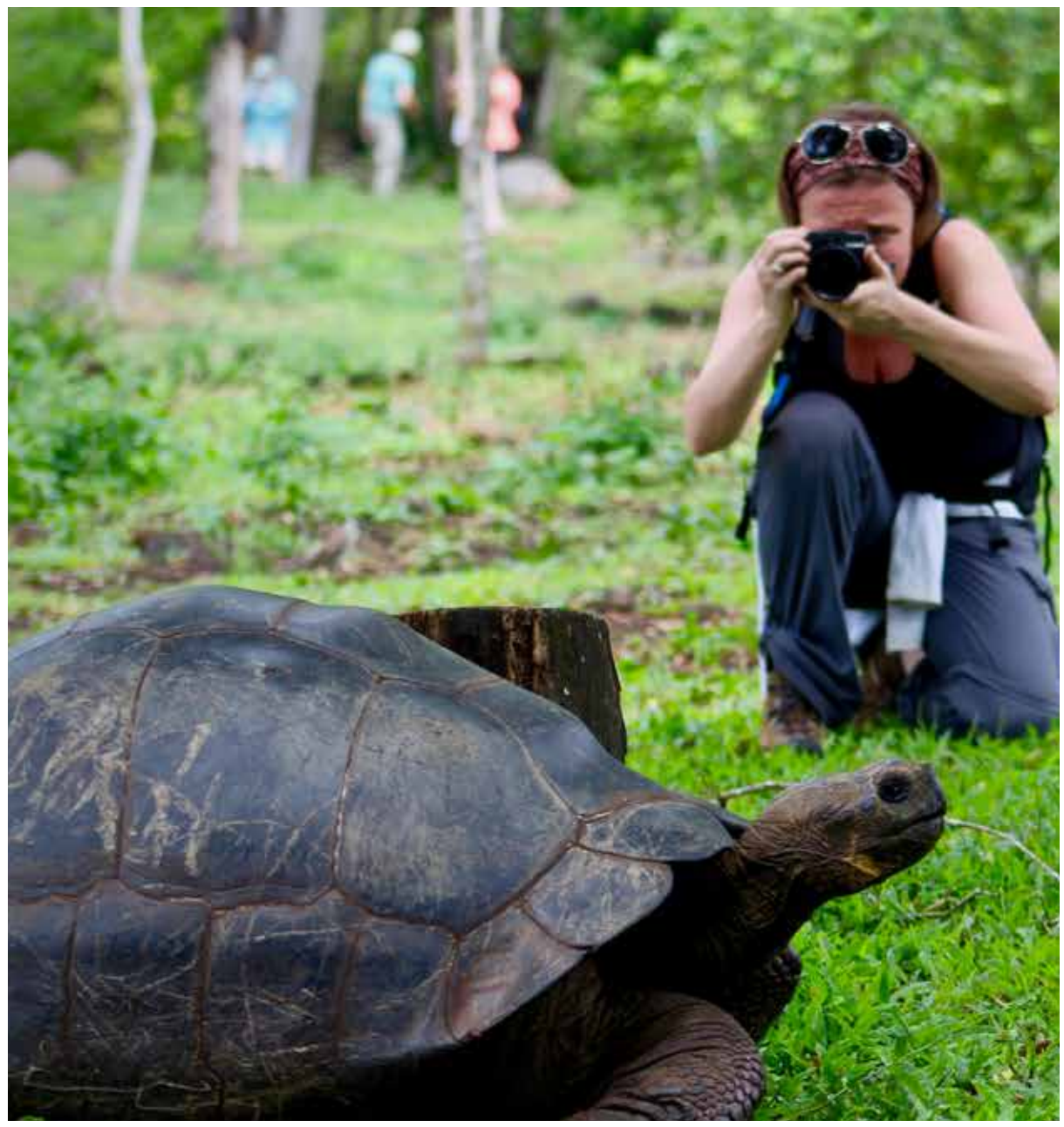
Hands on work, help with the reforestation of Galapagos.

Overnight: Hotel Fiesta, Santa Cruz

DAY 5

TORTUGA BAY AND CHARLES DARWIN STATION

Today your program will take you to two of Puerto Ayora's most popular excursions.
To start your day, you will visit the Charles Darwin Research Station and the headquarters of the Galapagos National Park Service, from which biological research and indispensable conservation management of this unique but vulnerable archipelago are directed.



Next, you will hike from Puerto Ayora, through a tropical dry forest where you can compare different species of Darwin finch, to be rewarded with an unbeatable panoramic ocean view of the wild natural beach of Turtle Bay. Popular amongst experienced surfers due to its impressive waves.

We will have an expert biologist from the Charles Darwin Foundation who will talk in-depth about all the conservation efforts that are being made. Also, he will explain that most species in Galapagos are endemic, which means that if threats to these are not kept in check, the wildlife could be put at risk and ultimately could become extinct.

LECTURE HOURS: 4 HOURS
Presented by a Biologist from the Charles Darwin Foundation learn about the theory of evolution.

WALKING CLASSROOM HOURS: 2 HOURS
Led by our Specialized tour guide, learn about the different species of Darwin finch and the biodiversity of the Islands.

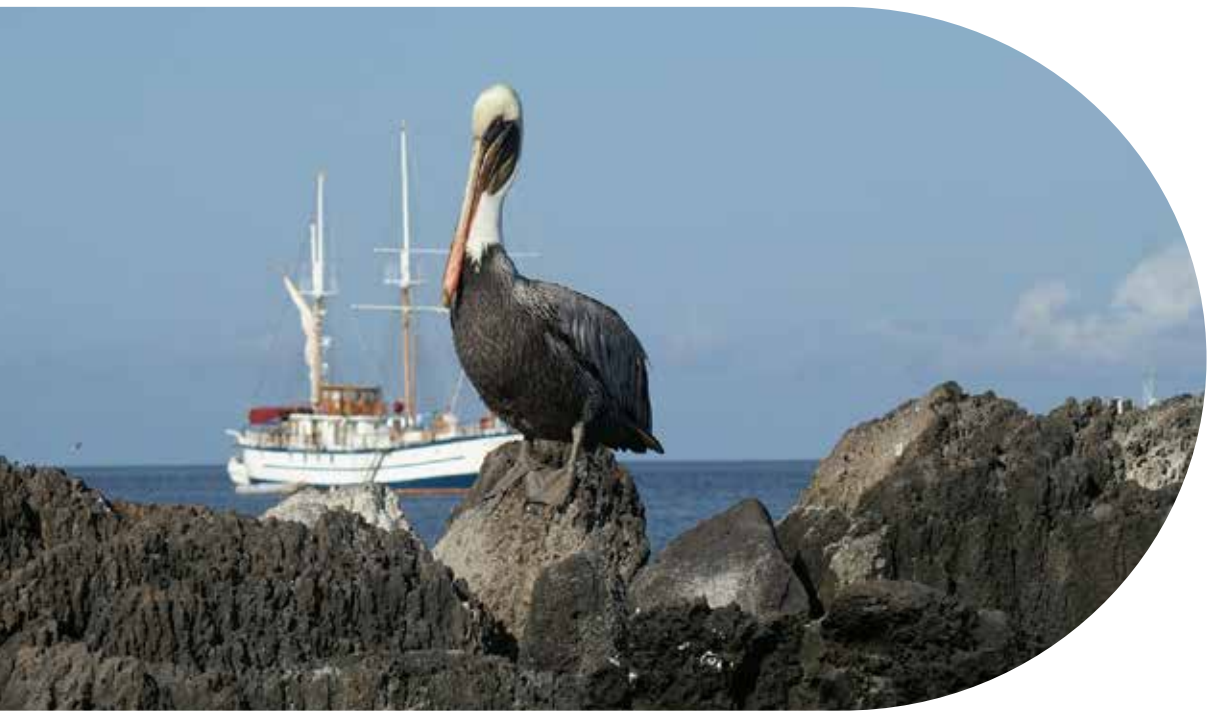
Overnight: Hotel Fiesta, Santa Cruz

DAY 6

PESQUERÍAS

Today very early in the morning you will visit the fishing harbours of Santa Cruz and will have a forum with a fishing expert. Fishing is one of the most important activities in Galapagos. It earns the locals more than 2 million dollars per year. It is a source of employment for more than 500 fishermen and their families. In addition, fishing is essential for food security for the local people of the Archipelago.

There are more than 50 species that can be fished in Galapagos; among the most important are: spiny lobsters, slipper lobsters and a variety of fish.



The Galapagos National Park Directorate and other partners are carrying out interdisciplinary researches to achieve sustainable fisheries in Galapagos. These researches include, from the biology and ecology of species, line-based ecosystems, capture technologies, up to the governance, sociology of fishers and economy of fishing activity. After lunch you will head to your hotel.

In the evening you will visit a foundation to learn about environmental impact assessments, and landfill designs and blueprints to assist in the transition towards a comprehensive and sustainable waste management in the Galápagos Islands. You will observe how an integrated waste management and recycling system works to ensure an efficient and comprehensive collection of all kinds of waste, with significant reductions in the quantities of waste generated through effective waste minimization programs, including elimination of waste at the source, improvement of current recycling activities, and the development of recycling, disposal, and treatment options for other types of waste.

LECTURE HOURS: 6 HOURS

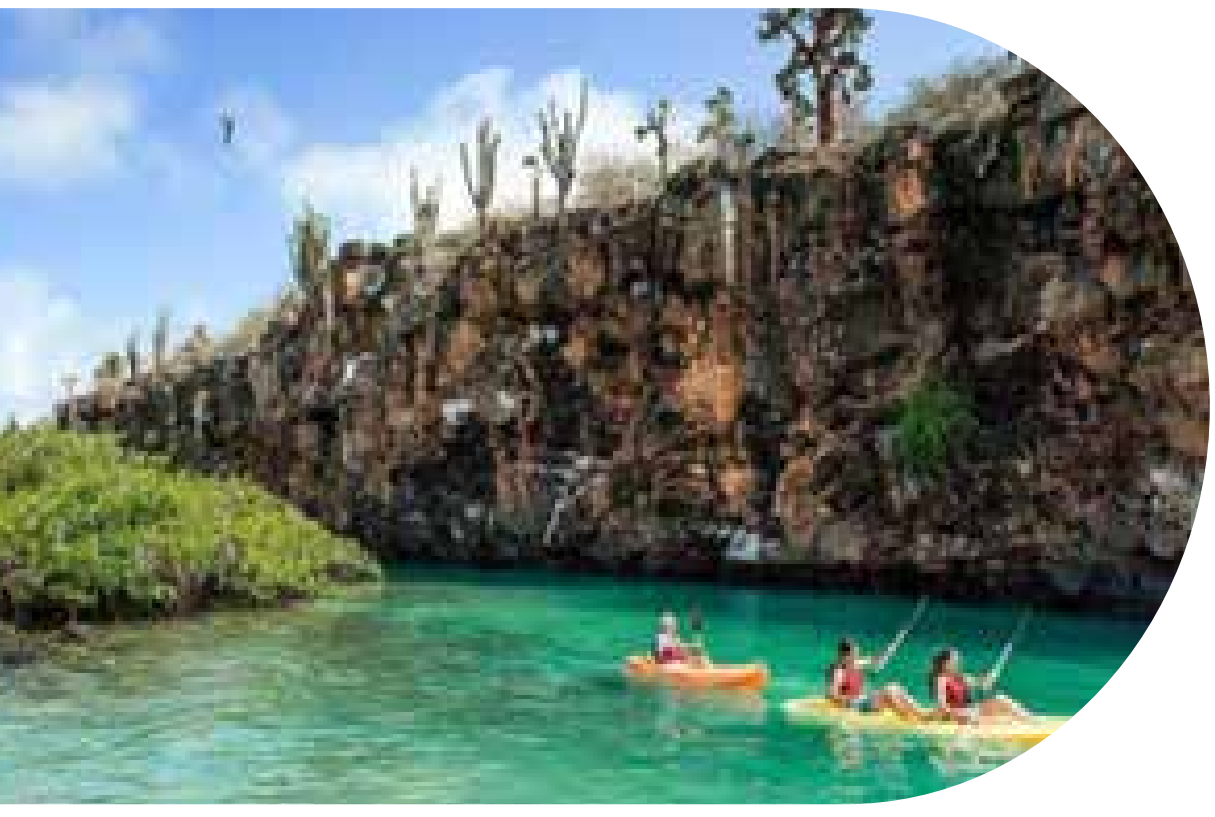
Taught by MSc. Cecilia Puertas, learn about Fishing harbors and the impact on the Galapagos Islands.

WALKING CLASSROOM HOURS: 2 HOURS

Led by our specialized tour guide visit the fishing harbor.

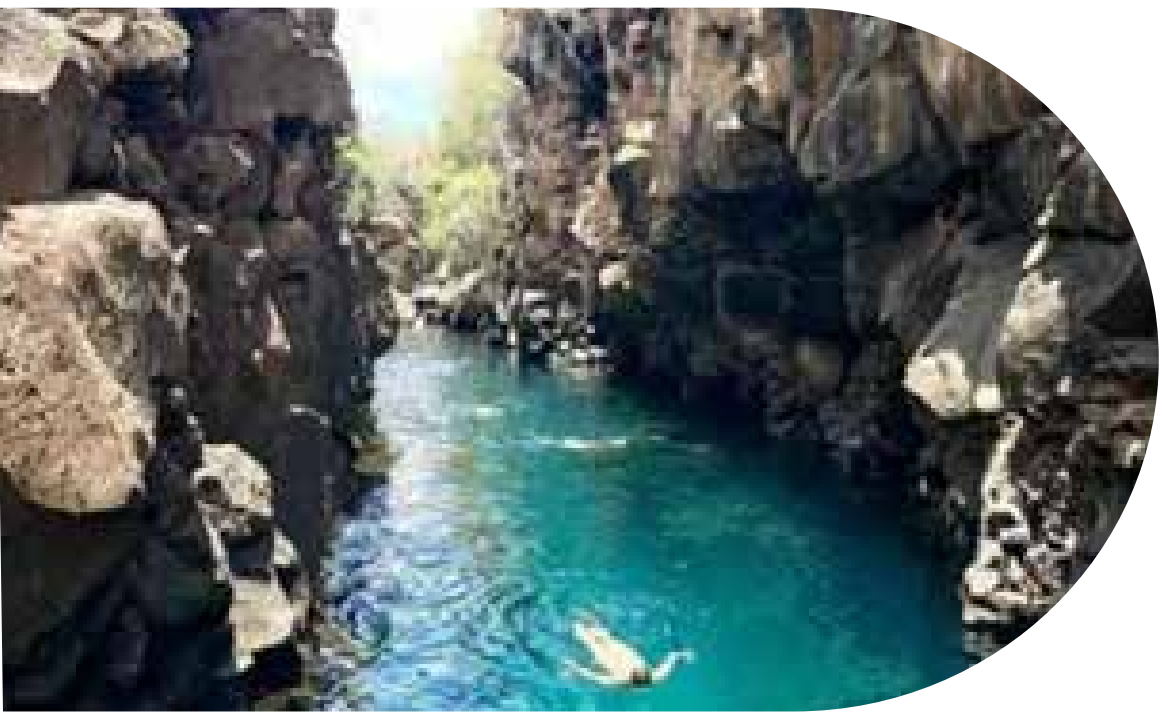
Overnight: Hotel Fiesta, Santa Cruz

DAY 7



LOS ALEMANES AND LAS GRIETAS

This day will be a very memorable and adventurous day since you will be kayaking around Academy Bay and la “Playa de los Alemanes”.



You will explore the cove, mangles, cliffs, lava channels, and beaches beyond. A nearby popular site, called Las Grietas (The Cracks), invites you to a refreshing swim or some snorkeling in its impressive gorge.
In the afternoon you´ll have a chance to present a project about your finds of sustainability of the islands.

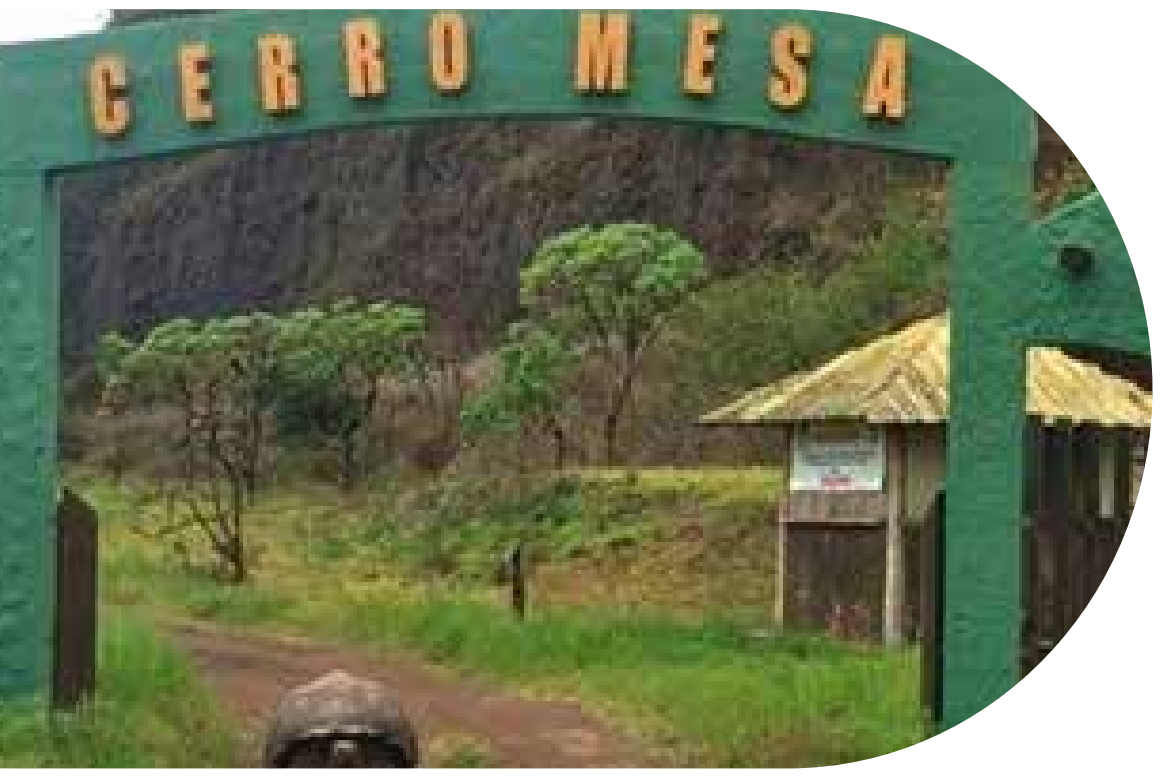
WALKING CLASSROOM HOURS: 4 HOURS
Led by MSc. Cecilia Puertas Tour the town and identify sustainable practices of tourism.

PRACTICE HOURS: 6 HOURS
Led by our specialized tour guide, learn about rock formations and how salty and sweet water converge to form ideal ecosystems for animals.

Note: If you´d consider one free day for your students to go on a navigable tour, we´d recommend taking day 7 as a free day.

Overnight: Hotel Fiesta, Santa Cruz

DAY 8



CERRO MESA AND GARRAPATERO

On this memorable visit to Cerro Mesa Ecological Reserve you will enjoy a picturesque hike along its paths, admiring the wildlife and taking in the spectacular views of the island and its surroundings from the lookout point.

Next, we continue to Garrapatero beach, where you can discover the beautiful wildlife species that can be found in the area, such as flamingos and mallards in a nearby lagoon. You may choose to rent a kayak and paddle around the island before we return to Puerto Ayora.

At night, be ready for a farewell dinner with a cooking show in which you will become the chef of well-known Ecuadorian delicacies.

PRACTICE HOURS: 1 HOUR
Become a scientist of the Island and learn how to identify and log different species.

LECTURE AND CLOSING DAY: 5 HOURS
Presented by MSc. Cecilia Puertas and the Students.

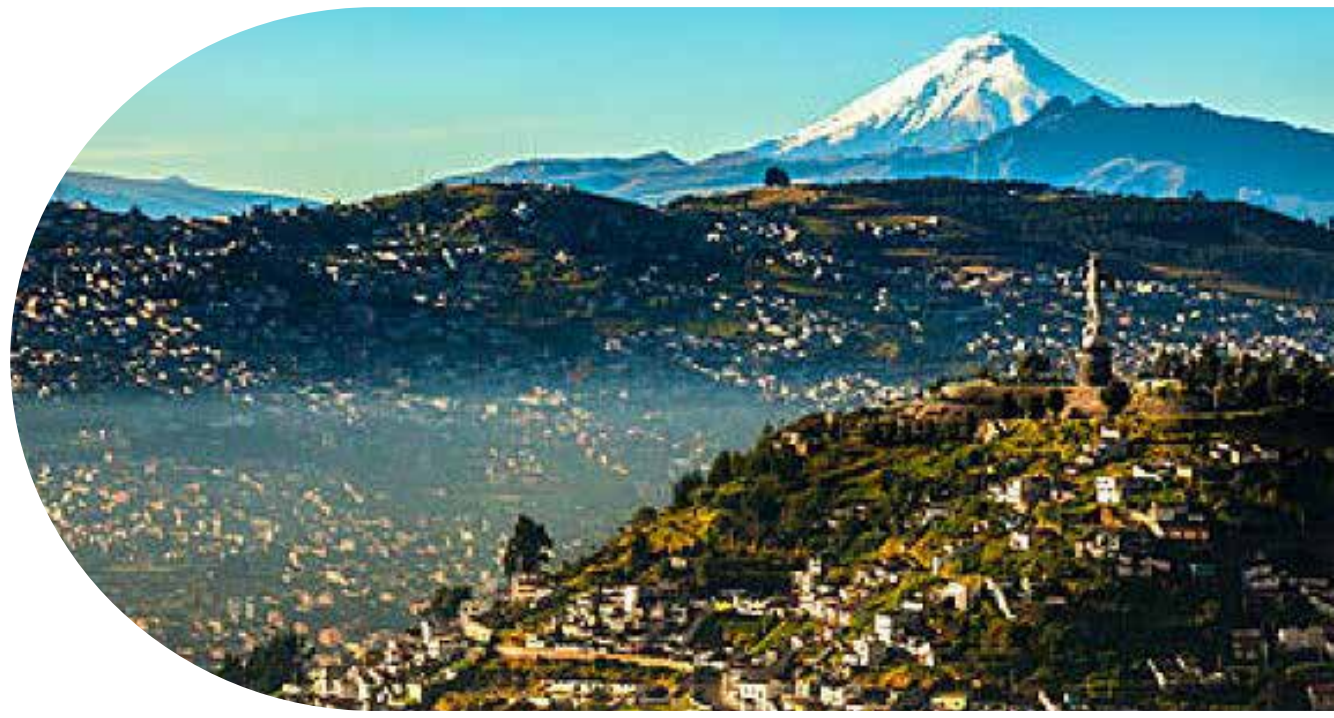
- Results of the Galapagos Visit

DAY 9

BACK TO THE CONTINENT

It’s time to say goodbye to Galapagos!

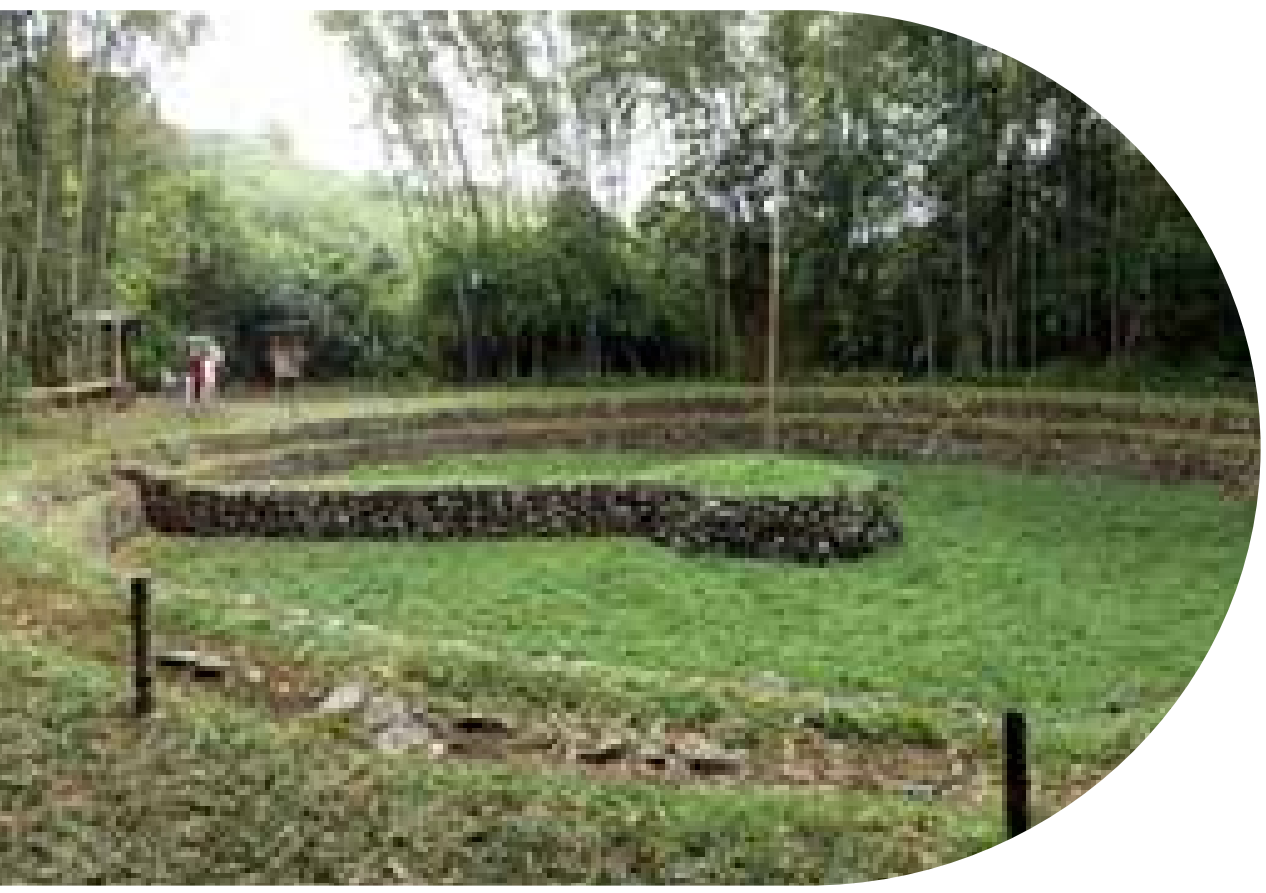
After breakfast you will be transported from your hotel to the airport for your domestic flight back to the continent. The rest of the afternoon is for you! Go shopping, get some souvenirs or visit that church you liked so much again.



Overnight: Whyndham Garden Quito

DAY 10

TULIPE AND MINDO



In The morning you´ll visit Tulipe, this place was built by the Yumbo people, who inhabited the north and northwestern valets and mountains around Quito from around 800 to 1660 AD.

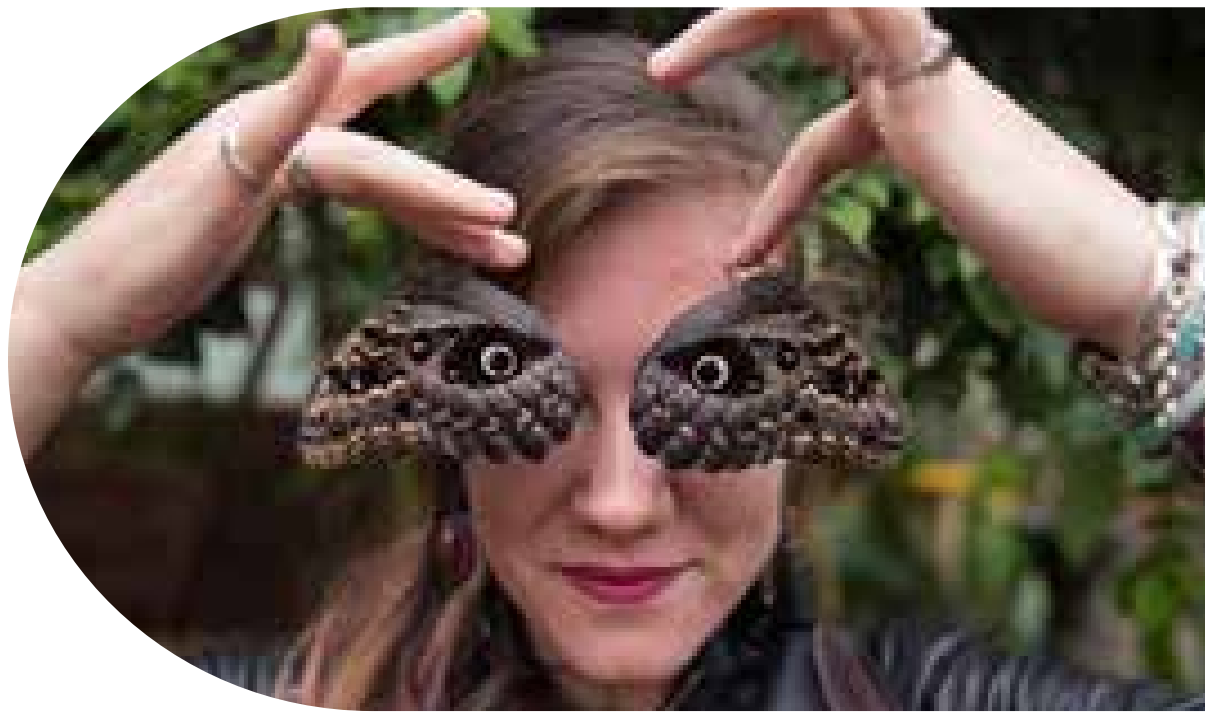
Although disregarded by the Spanish chroniclers and subsequent historians, the site at Tulipe point to an important nation. The remains at Tulipe suggest that this was the location of the civilization’s main ceremonial site. It is also thought that Tulipe controlled the crucial trade route between the Pacific coast, the Andes and the Amazon to the east. The site is made up of eight structures, one of which is an Inca construction, as the conquering Incas built their temple con top of an existing one.

Mindo is a village in the Andes Mountains of northern Ecuador. It's known for the many bird species, butterflies and orchids found in the surrounding cloud forest, part of the Mindo-Nambillo Reserve. A tarabita (cable car) runs over the Nambillo River to a mountaintop, where trails lead to several waterfalls, including Cascada Nambillo. Zip lines run through the forest canopy. Tubing on the Mindo River is popular.

Mariposario: This is a unique interactive garden, where we will learn about the 4 life stages of a butterfly. Here we can feed and admire more than 1200 butterflies of 25 different species.

Chocolate Tour: In this tour you´ll see the process of how chocolate is made from "bean to bar".

Night walk: Enjoy a guided walk through the cloud forest in search of nocturnal animals.



WALKING CLASSROOM HOURS: 6 HOURS
Led by MSc. Cecilia Puertas: learn about the beautiful cloud forest.

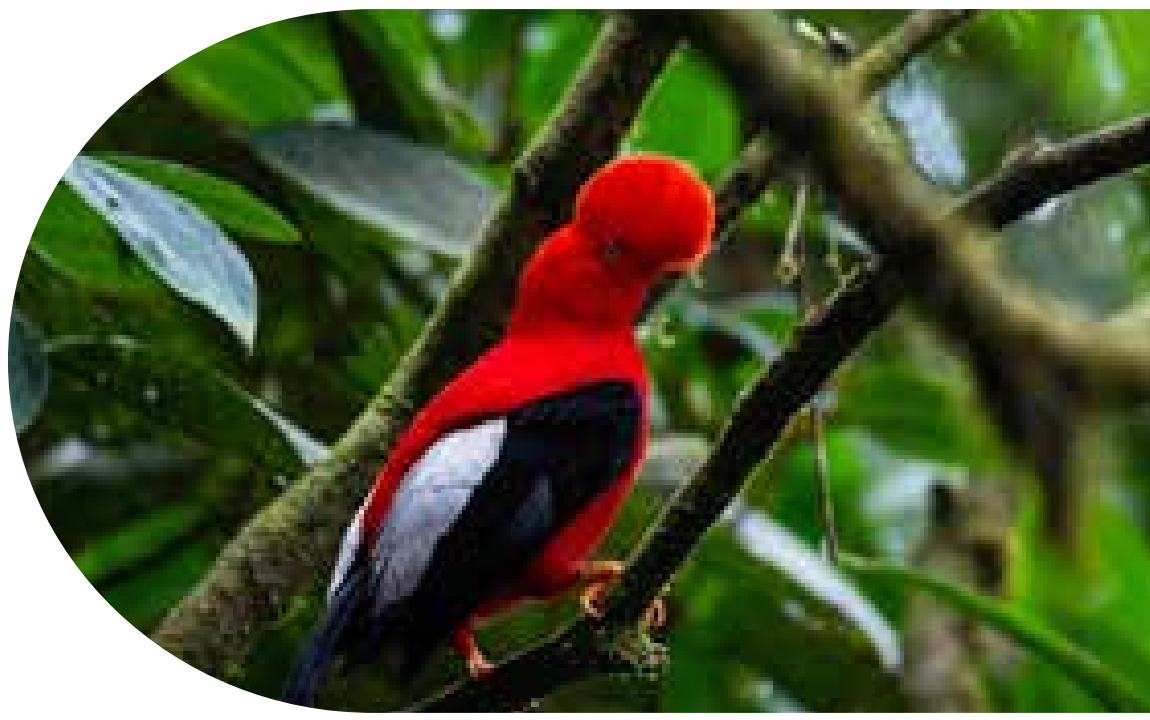
LECTURE HOUR: 1 HOUR
Learn about Ecuador’s Biodiversity.

Overnight: Septimo Paraíso Mindo

DAY 11

CHOCÓ ANDINO

This Biosphere Reserve shelters about 270 species of mammals, among which are emblematic varieties such as the spectacled bear, the black-breasted shark, the rooster of the rock, olingos, tigrillos and innumerable insects, amphibians and reptiles; in addition to endemic species. like the Chocó toucan and the Pichincha rocket frog.



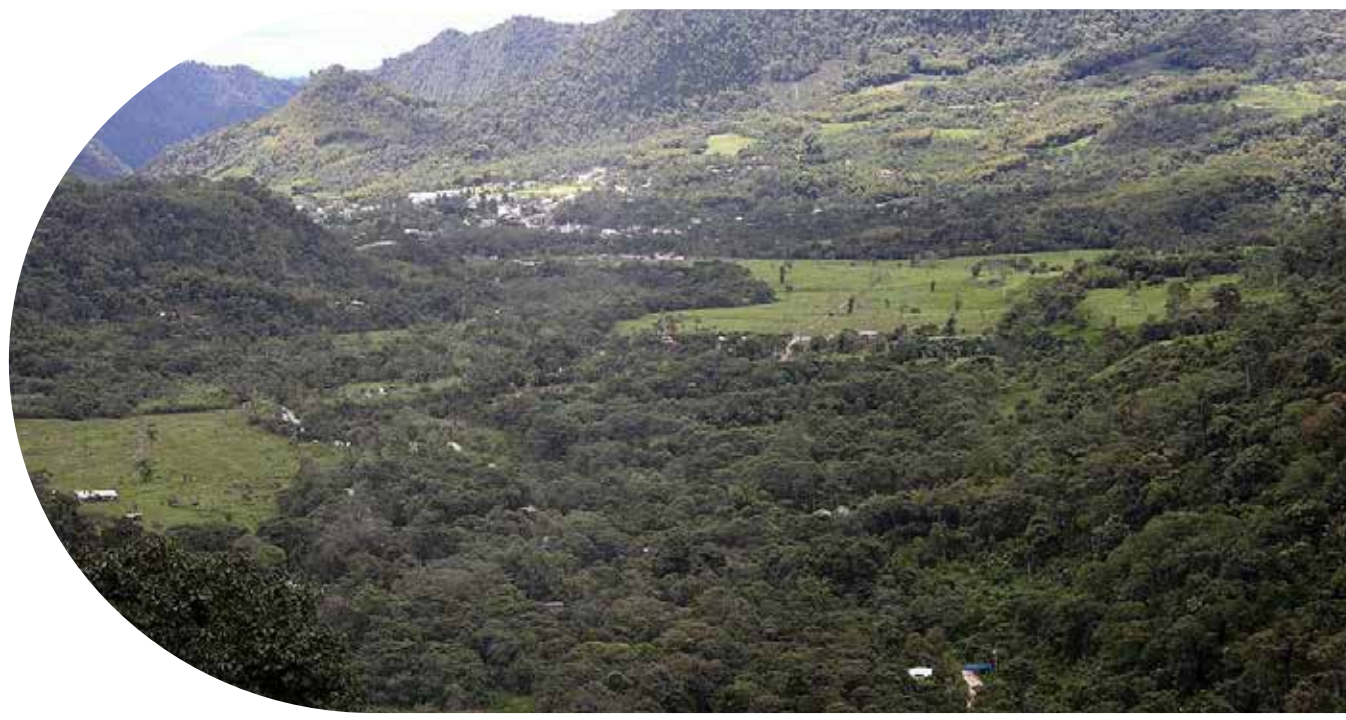
Besides the emblematic flora and fauna, the extensive territory of the Chocó Andino preserves attractive natural sites such as rivers and waterfalls, where sustainable tourism alternatives are promoted.

The Mindo-Tandayapa circuit is located in this territory, a pioneer site in Ecuador in the Christmas Bird Count, in December 2018 434 species were recorded in an imaginary radius of 20 kilometers, during 24 hours.

Visit to Cielo Verde village. On the way you will see the Manduriacu Hydroelectric Power Plant. Walk to the Manduriacu river watching the natural habitat, swimming in the river.

After lunch we will walk around the town to Identify the sustainable practices & propose innovative alternatives.

WALKING CLASSROOM HOURS: 8 HOURS
Taught by MSc. Cecilia Puertas; learn about the beautiful flora, fauna and communities of the cloud forest.

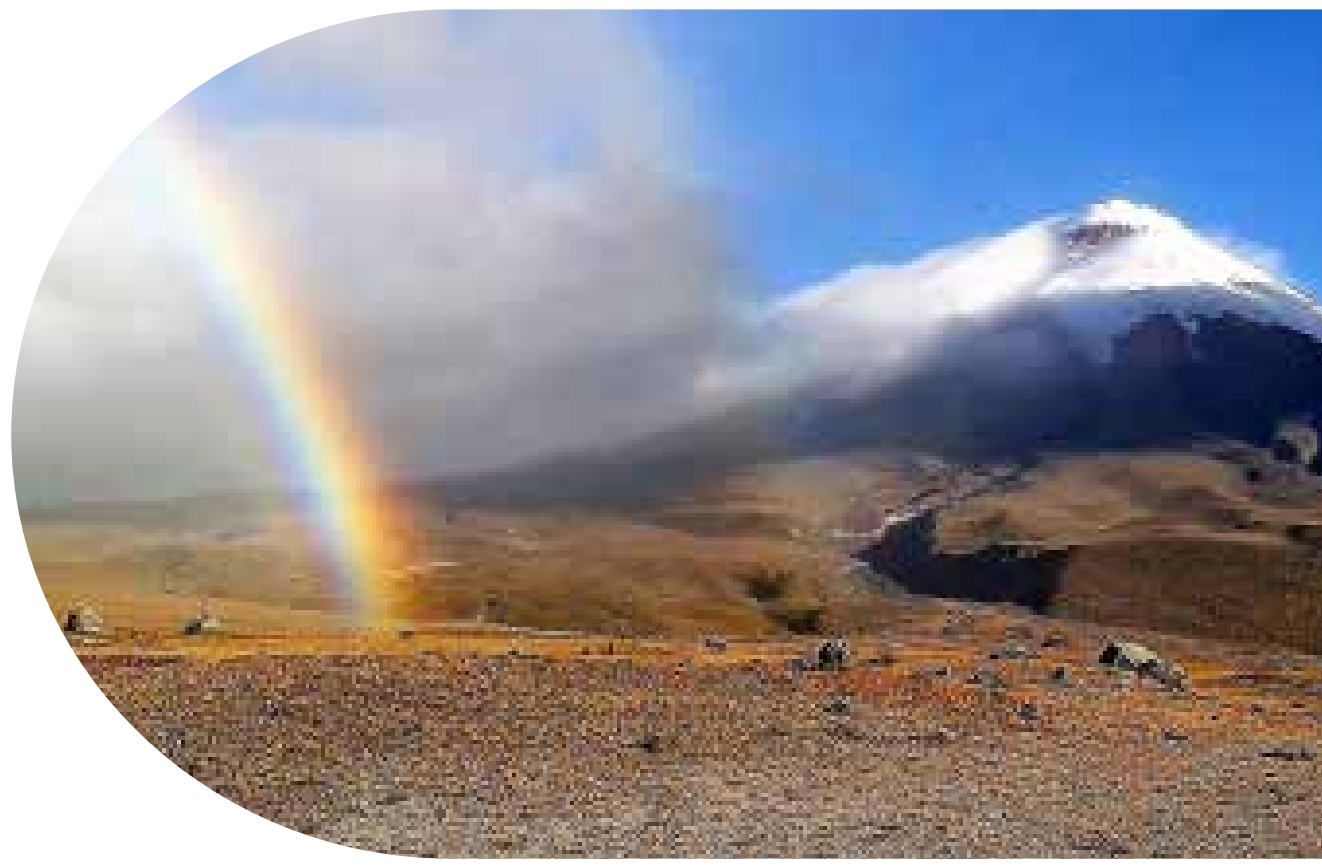


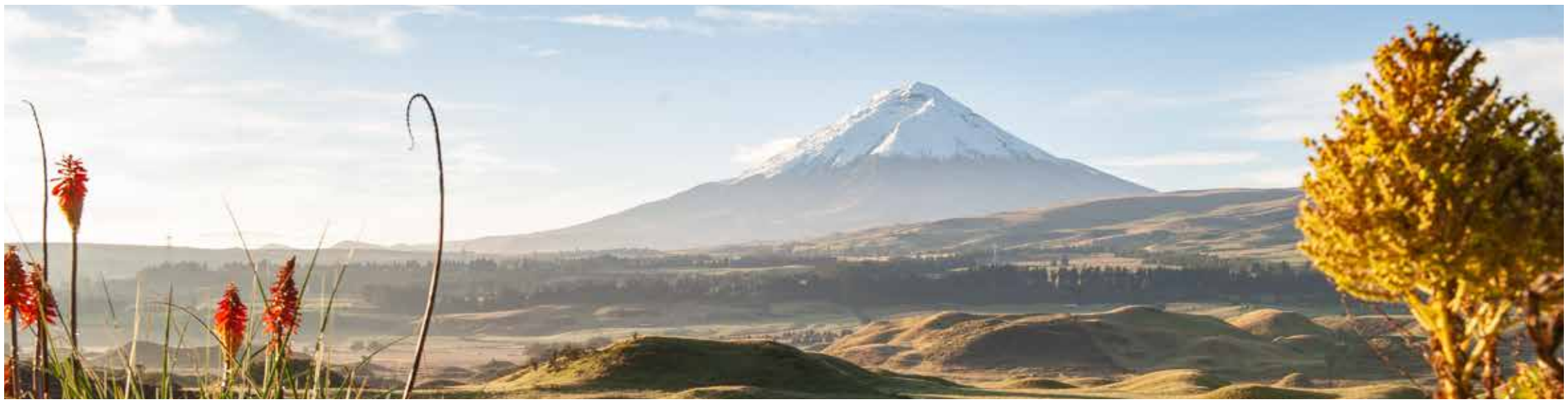
Overnight: Whyndham Garden Quito

DAY 12

COTOPAXI

The easily accessible Cotopaxi National Park is Ecuador's most visited mainland reserve (Important Bird Area). No wonder, because the lovely symmetrical and glaciated cone of Cotopaxi volcano belongs to the most prominent of the entire Andean range. It looks very similar to Mount Fuji. With its elevation of 5,897m/19,347ft Cotopaxi also belongs to the highest active stratovolcanoes worldwide (latest eruption 2015), and it has the second-highest peak of Ecuador (after Chimborazo).





HIGHLIGHTS:

- Approach Ecuador's most prominent snow-capped volcano
- Adventurous drive with private transport through lunar-like landscapes
- High altitude hikes around paramo lake, to mountaineer's refuge, and the snowline

Overnight: Whyndham Garden Quito

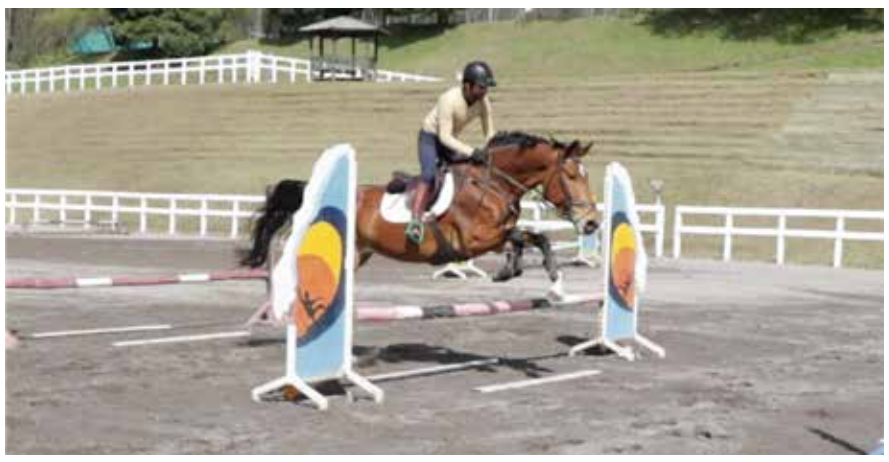
DAY 13

UIDE QUITO

During your first day in Ecuador you´ll visit UIDE and get lectures with our teachers that will tell you all about your amazing journey through Ecuador, you´ll talk about the biodiversity of the country and the history that makes Ecuador such a rich mix of cultures and sceneries.

PAINTBALL / HORSEBACK RIDING

Enjoy the thrill of a paintball fight against your friends, or take things a little slower and relax and learn to ride one of UIDE's horses.



FACULTY LECTURE HOURS: 6 HOURS

Lectures led by: MSc. Cecilia Puertas, MSc. Francis Vivanco and PhD.(c) MSc. Sebastián Donoso, MSc. Mónica Puertas, Msc. Marta Puertas.

- Ecuadorian Culture & History
- Sustainable Development
- Sustainable Tourism
- The Saga of Atahualpa

Overnight: Whyndham Garden Quito

DAY 14

BACK TO THE US!

- We hope you had a lovely time in Ecuador!

UIDE

Powered by
Arizona State University

GLOBAL SUSTAINABLE CHALLENGES IN ECUADOR
ANDES & GALAPAGOS ISLANDS
S5-PP-GSCANG

COURSE DETAIL
Course code and name: S5-PP-GSCANG Global Sustainable Challenges in Ecuador: Andes and Galapagos.
Dates: Summer of 2023
Number of academic hours: 78
Duration: 2 weeks
Pre-requisites: no prerequisites

UIDE

Powered by
Arizona State University

COURSE OVERVIEW

Ecuador is one of the seventeen most megadiverse countries in the world. Some economic activities of the country are related to its ecosystems, such as fishing, ecotourism, and the exportation of raw products such as cacao beans, coffee, and roses. These activities impact the environment and could affect fragile ecosystems, especially in places with endemic species like the Galapagos Islands.

Sustainability is based on the recognition of the limits and potential of nature. Societies and governments are increasingly conscious of the need to protect the environment and establish sustainable practices related to economic activities. Thus, nowadays, it is an asset to understand the proper use of the territory and resources and the participation of local communities in different economic activities. Ecuador is no exemption. Consequently, several sustainable practices and conservation projects have been enforced throughout the Ecuadorian territory, especially in protected areas. Because of these efforts, the Galapagos Islands were awarded as the best sustainable destination.

This small country located on the equator is not only rich in biodiversity, but also history and culture. Ecuador is a multi-ethnic country with around 15 indigenous nationalities. After two processes of conquest, Ecuador has an extraordinary history that, together with the environmental differences between its regions, led Ecuador to become the country that now exists.

Because of the above, Ecuador is a perfect destination for an interdisciplinary two-week summer program aiming to explore how the historical processes and the environment shape the forming process of species and culture. This program considers the co-incidence of nature and humans through history. Nature impact human groups' culture, ideas, and knowledge. For instance, Charles Darwin shaped the theory of the origins of species via natural selection by closely looking at endemic species of the Galapagos Islands; and, some ecosystems and species are endangered because of human action. That is the reason why sustainable practices are so needed. This program also focuses on sustainable practices related to economic activities at the local and international levels.

Specific components of this program will include:

- Walking classrooms around the Historic Center of the city of Quito and the Intiñan Solar Museum to actively identify in a real-life context the cultural and historic elements addressed in the lecture.

- Excursions to the Galapagos Islands and Mindo cloud forest to learn about endemic species and their conservation.
- Analysis of human impact on the environment and the value of biological research and conservation management of these unique ecosystems.
- Observation and comparison of different flora and fauna species in their natural habitat.

This course will expose participants to important real-world applications of the science through exposition to specific environments and sustainability projects. Our program includes discussions about ongoing issues in climate change, environmental degradation, and conservation efforts in Ecuador with local scientists and experts. Students will be able to identify characteristics of some endemic species, understand the relationship between environment and species, and comprehend how human action can positively or negatively impact nature through lectures, discussions, field trips or walking classrooms, and practices or hands-on activities. All the activities included in the program require an active participation from students and promote discussion with faculty and other students.

LEARNING OBJECTIVES

The learning objectives of this interdisciplinary summer program are:

1. Explore the historical and environmental factors that shaped Ecuador as a multi-ethnic and megadiverse country.
2. Gauge human impact on fragile ecosystems.
3. Get to know the 17 sustainable development goals and Ecuador's sustainable actions.
4. Understand the importance of sustainable and conservation projects to ensure endangered species and restore native and endemic plants.
5. Learn about the theory of evolution through the observation of species.

ASSESSMENT

Assessment item	VALUE %
Exam 1: History and culture	20
Exam 2: Biodiversity, conservation, sustainability	20
Practice 1: flora and fauna identification exercise	10
Practice 2: reforestation	10
Group project: sustainable innovativeproposals Field work/data gathering Final paper	 10 10

Oral presentation	10
Participation	10
TOTAL	**100**

Exam 1 (20%): A first written examination will be given based on material analyzed in lectures, discussions, readings, and field exercises regarding Ecuadorian history and culture.

Exam 2 (20%): a second written examination will be given based on material analyzed in lectures, discussions, readings, and field exercises about biodiversity, conservation, and sustainability.

Practice 1 (10%): We will grade students' capacity to identify flora and fauna endemic species according to what was explained on lectures.

Practice 2 (10%): 10 percent of the punctuation depends on students' active participation and knowledge about endemic species during the hands-on reforestation activity on the Galapagos Islands.

Group project (30%): Students will work in groups to propose a sustainable innovation. The project's final grade considers fieldwork, a final written paper, and an oral presentation of the proposal. Each aspect provides one third of the final grade.

• Students are required to meet the deadlines established by the lecturers at the beginning of the short program
• Assistance is mandatory for all lectures and activities.
• Students will receive transcripts for the short program and a certificate of approval if minimum grades are acquired.

GRADES CONVERSION SYSTEM

	FAIL	SUFFICIENT	GOOD	VERY GOOD	EXCELLENT
UIDE	0-69	70 - 76	77 - 86	87 - 92	93 - 100
ASU	F	C - C+	B - B	B+ - B+	A

Powered by
Arizona State University

COURSE CONTENT

Key: L=lecture, **FL**= Field Lecture, **P**=Practice

Lecture	Type	Contact hours
Ecuadorian culture & history: - Ecuador's ancient history focused on human groups - Processes of Incas and Spanish conquest of the Ecuadorian territory. - Last Inca sovereign and the falling of an empire that led to the beginning of a new order - Pre-hispanic, Hispanic, pre-columbian, and baroque art observation through a visit to the Historic Center of the city of Quito. - Center of the earth physics and history - History of Yumbo people (600BC) to current inhabitants of Tulipe - Cotopaxi volcano as a sacred mountain for native ethnic groups	L=4 FL=18	22
Sustainable Development: - 17 sustainable development goals - Ecuador's actions towards the achievement of sustainability - Sustainable and non-sustainable practices in the Galapagos Islands - Human-based environmental impacts in the Islands *Projects of innovative sustainable practices proposals	L=9 FL=4	13
Sustainable economic activities: - Sustainable tourism - Proper use of territory and use of resources - Role of local communities in tourism - Sustainable fisheries in Galapagos - Fishing industry's impact on biodiversity	L=5 FL=2	7

- Local family's production of chocolate bars (from bean to bar) - Ecuador's place in the global political economy and its impact on the environment		
Unique Flora and Fauna observation: - Carpenter finch habitat and tools - Comparison of species at the tropical dry forest - Evolution of species and natural selection - Stages of a butterfly's life - Nocturnal animals on the cloud forest of Mindo - Manduriacu river watching the natural habitat of native trees and plants - Ecosystem and the local community	FL= 20 L= 3 P=1	24
Flora and Fauna conservation: - Local restoration projects in the Galapagos Islands (Cerro Mesa) - Reforestation of native endemic plants of the Galapagos Islands practice - Development of the Galapagos National Park - Value of research and conservation management of unique environments as the archipelago - SNAP National System of Protected Areas - SNAP Case Study: Yasuni National Park - Biosphere Reserves, Important Bird Areas, Ramsar Sites	FL= 6 L= 3 P= 3	12
Lectures		24
Field lectures		50
Practice		4
Projects		n/a
Total instructional hours:		78

Powered by
Arizona State University

READINGS

Ballesteros-Mejia, L., Angulo, E., Diagne, C., Cooke, B., Nuñez, M. & Courchamp, F. (2021). Economic costs of biological invasions in Ecuador: the importance of the Galapagos Islands. *NeoBiota* 67:375 – 400 https://hal.archives-ouvertes.fr/hal-03410336/document

Dueñas, A., Jiménez-Uzcátegui, G. & Bosker, T. (2021). The effects of climate change on wildlife biodiversity of the Galápagos Islands. *Climate Change Ecology* 2:1-11 https://doi.org/10.1016/j.ecochg.2021.100026

Gebara, M.F., May, P. & Platais, G. (2021). Pandemics, conservation, and human-nature relations. *Climate Change Ecology* 2:1-5. https://doi.org/10.1016/j.ecochg.2021.100029

Knauß, S. (2018). Conceptualizing Human Stewardship in the Anthropocene: The Rights of Nature in Ecuador, New Zealand and India. *J Agric Environ Ethics* 31, 703–722. https://doi.org/10.1007/s10806-018-9731-x

Quick, J., & Spartz, J. (2018). On the Pursuit of Good Living in Highland Ecuador: Critical Indigenous Discourses of Sumak Kawsay. *Latin American Research Review*, 53(4), 757-769. doi:10.25222/larr.132

Gachet, I., Grijalva, D.F., Ponce, P.A. & Rodriguez, D. (2019). Vertical and Horizontal Inequality in Ecuador: The Lack of Sustainability. *Soc Indic Res* 145, 861–900. https://doi.org/10.1007/s11205-017-1810-2

Burbano, D., Valdivieso, J.C., Izurieta, J. C., Meredith, T. & Quiroga Ferri, D. (2022). "Rethink and reset" tourism in the Galapagos Islands: Stakeholders' views on the sustainability of tourism development. Annals of Tourism Research Empirical Insights 2(3):1-12. https://doi.org/10.1016/j.annale.2022.100057

CONTACT PERSON

Name: Samanta Andrade M
Position: Short Programs Coordinator
Phone: (+593) 988610292
e-mail: candrade@uide.edu.ec