

.VĒRITAS

S T U D Y A B R O A D

Center for International Programs and Sustainability Studies

Course name: Indigenous Ecology and Sustainability

Course code: HUM-3100

Total contact hours: 60

Requisites: Presential modality

COURSE DESCRIPTION

As since 20th century, modern human influences are being increasingly recognized as having negative human and environmental impacts, now we need different approaches for a sustainable living. The study of local and traditional environmental wisdom entails long-term bodies of knowledge derived from unique worldviews that are deeply embedded in culture and traditions; as individuals use to interpret and make sense of the different human beliefs and assumptions, the communities display practices and experiences involving multiple environmental interactions. Considering this, indigenous ecology linked to agriculture and sustainability insights have an enormous value in terms of current and future human and environmental health and wellbeing.

This course introduces the study of indigenous and local approaches to nature, providing a background in agriculture and sustainability with the aim that students make appropriate and informed choices regarding their own current and future role in sustainability. Throughout this class we will study the learned lessons along 15 years of projects done in indigenous and peasants' LATAM communities, focusing indigenous (agro-) ecology and sustainability. Emphasis is put on study cases done in Costa Rica showing topics of world scope and significance –*ecological awareness, indigenous cosmovision, system's resiliency, environmental policies framed within particular historical perspectives*– including additional information from study cases done in Peru and Panama, among other LATAM countries.

The class cultivates an understanding of local and indigenous articulations and ecological relations through the concepts, mechanisms and applications of agriculture and sustainability. Terms, such as: conventional, indigenous & local agriculture; agroecology; local & indigenous ecologies (the systems and philosophies of environmental responsibility and food security); and sustainability in local communities; together with general topics about current environmental, economic, and social problems and actions -will be assessed.

COURSE PRE-REQUISITES

This class bears no special requirements and contributes to majors in culture and environmental studies, agriculture and food sciences, anthropology, sociology, history, and biology, among others.

AUDIENCE

This course is structured for International Students attending the Study Abroad program at Universidad Veritas. However, courses are not exclusive to foreigners so a few native students might enroll in this course. Some of the courses are also taught in Spanish as part of our future Bachelor in Sustainability Management.

This course belongs to the CIPSS sociology and philosophy -humanities and social sciences- area; its nature is mainly theoretical-practical, participative, and demonstrative, and it seeks to clarify the following question:

How to apply local & indigenous knowledge for fostering sustainability?

In order to respond this question, we will study the following **generative topics**:

- The importance of local and indigenous agriculture and food production in the current context of the world, mainly focusing the role of environment and its sustainability.

- Current and historical problems in food production, focusing the cocoa, coffee, the bananas, and the pineapple cases, among others.
- Solutions provided by means of the sustainable, local, and indigenous agro-ecological food systems and the organic agriculture approaches.
- A background in local study cases in indigenous agroforestry and conservation, linking them with current Sustainable Development Goals.
- Experiences in local and indigenous uses of natural resources and agriculture, including traditional agroforestry and agro-ecological study cases.

Along the course, the following **skills** will be fostered:

- Ability for describing local and traditional production practices.
- Ability for understanding the general concepts related to sustainable development and Sustainable Development Goals, linked to local and indigenous agricultural practices.
- Ability for analyze current social and environmental impacts derived from conventional agriculture, and to propose sustainable solutions.
- Ability for analyzing the importance of ancient wisdom uses of nature and all what the agroecology embraces.
- Ability to integrate alternative agricultural and ecological practices and ideas.
- Ability to integrate agriculture, ecology, and sustainability concepts for encouraging proper production means for the wellbeing both of people and the planet.

Among the **values** and **attitudes** that will be promoted among students are the following:

- Concern for learning to learn.
- Concern for solving problems.
- Systemic thinking
- Respect for diverse thinking
- Respect for integrative knowledge
- Teamwork
- Leadership

COMPETENCIES, CRITERIA & EVIDENCE

The competencies for the Veritas University are reflexive and integral actions that respond to the professional profile and to the problems of the context, with suitability and ethical commitment, integrating the know-how, the know-how, and the knowledge to know in a perspective of improvement.

Below are both the disciplinary and general competencies, linked to their criteria and evidence of performance for this course:

Competencies type	Key competencies	Performance evidence
Disciplinary Effectively integrates the notions of indigenous ecology, agroecology, and sustainability, to benefiting both people and nature.	Identifies the value of local and indigenous agricultural & ecological alternatives tied to Earth homeostasis.	<ul style="list-style-type: none"> ○ Discussion of issues ○ Thematic Discussions
	Demonstrates a wide and general insight of indigenous ecology, agroecology and sustainability concepts and resources.	<ul style="list-style-type: none"> ○ Reading's analysis ○ Learning journals
	Understands the essentiality of local and indigenous practices of nature uses, relating them with the conventional agriculture effects on people and environment.	<ul style="list-style-type: none"> ○ Study case analysis ○ Mind maps
	Understands main issues of agroforestry, conservation, forest uses and food production present	<ul style="list-style-type: none"> ○ Reading's presentations ○ Learning journals

	in Costa Rica and in Latin America tied with sustainability aims.	
	Seeks to promote sustainable means of nature uses.	<ul style="list-style-type: none"> ○ Indigenous and/or agro-ecological projects visitation
General competencies	Performance criteria	Performance evidence
Integrates the necessary knowledge, skills, and attitudes in a strategic and flexible way to learn continuously considering the relation of new information with previous mental schemes and the possibility of a new mental scheme use.	Learning to learn competence.	<ul style="list-style-type: none"> ○ Practices on class ○ Thematic discussion ○ Learning journals ○ Readings' discussion and analysis
Integrates the knowledge, skills, and attitudes necessary to learn the skills of teamwork and leadership, including mentoring and evaluation.	Teamwork and leadership competence	<ul style="list-style-type: none"> ○ Field practices ○ Study case analysis ○ Class activities ○ Class reports

COURSE CONTENTS

UNIT I: Indigenous Ecology, agroecology, and sustainability

- Introduction to the course: Main physical and geographical characteristics of Costa Rica, its indigenous communities, and traditional farm-systems.
- Introductory concepts: Agriculture types, agroecology, indigenous ecology, ecological systems, sustainability & SDGs, resiliency, and interconnectedness.
- Environmental & sustainability milestones after the Second World War: “Silent Spring”; Sustainability history; the Green Revolution and the GMOs.
- Learning activities for the following competencies:
 - Student identifies the value of local and indigenous agro-ecological alternatives tied to Earth homeostasis.
 - Student identifies wide and general insights of indigenous ecology, agroecology and sustainability concepts and resources.

UNIT II: Costa Rica: The essentiality of sustainable practices.

- Forest and the Cocoa case: Indigenous cultivar, European’s view, Monilia and other issues, the rescue of the *Xocolatl* ancient traditions.
- Coffee, bananas & pineapple cultivars in Costa Rica: From traditional agriculture till current issues both in peasants’ communities and indigenous territories.
- Some sustainability solutions from Costa Rica:
 - Urban gardens, composting & municipality’s diver-city programs.
 - Sustainable institutions, ecological blue flag & food waste programs.
 - Agricultural open markets, organic agriculture, and organic fairs.
 - Agroecology in tropical & indigenous cropping systems.
 - Family farm systems in the countryside and in the cities.
- Learning activities for the following competencies:

- Student understands the essentiality of local and indigenous practices of nature uses, relating them with the conventional agriculture effects on people and environment.
- Student understands main issues of agroforestry, conservation, forest uses, and food production present in Costa Rica and in Latin America tied with sustainability aims.

UNIT III: Learnings from indigenous ecology: Costa Rica and LATAM study cases

- Study case experiences with indigenous:
 - Use of the medicinal & artisanal plants and forest nursery in natural habitat, the Conte Burica *Ngöbes* case.
 - Agroecology, climatic change and *Cabecar* indigenous agriculture, the Bajo Chirripó case.
- Study case experiences with peasants:
 - Habitat fragmentation, biological corridors & their links to yucca agriculture, the collared peccary's case at La Selva, Costa Rica.
 - Peasants' experiences on farming, wildlife uses, butterfly's farms and own agroecological vanilla & citric initiatives in Costa Rica.
- Study case experiences with indigenous and peasants:
 - Water issues and the ayllu's alpaqueros farmers in the *Uchusuma-Jachajawira* bofedal (high-Andean wetland) of Peru, Chile, and Bolivia.
 - Ecosystem's use, indigenous agriculture and forests conservation in Panama and Costa Rica, La Amistad case.
- Learning activities for the following competencies:
 - Student seeks to promote sustainable means of nature uses.

TRANSVERSAL-UNIT: Practices for the course: “Indigenous Ecology and Sustainability” (12-week terms). These possibilities may vary depending on available options.

Practice	Transversal unit: Topics to be cover on Fieldtrips
Quitirrisí Indigenous Territory (Huetar ethnicity)	1. Learning about indigenous ecology and current vs. ancient agricultural practices
	2. Plant’s uses for medicine and crafts.
Curridabat Sweet Gardens (urban gardens)	1. Bee’s and butterfly’s attractors.
	2. Non sting bees and bees’ urban gardens.
Artisanal food workshop (Bribri, Cabecar or Maleku ethnicity)	1. The cocoa/purple-corn* cultivar. 2. Traditional and cultural uses of cocoa. 3. Current uses of cocoa.

**Type of cultivar may vary depending on place/ethnicity visited*

METHODOLOGY

This course help students connect current conventional agriculture approaches—where fossil fuels fertilizers, agrochemical use and market pressure are the norm—with some local and indigenous alternatives, like the agroecological and sustainable means. Activities are planned at a basic and intermediate level, and they promote teamwork exercises in class, case studies analysis, reading discussions, and projects’ visitations.

The methodology of theoretical, practical, and participative exercises, together with readings, discussions, and assignments and fieldtrips, together with visits will provide a clearer approach for personal and professional development, noticing similarities and differences in the indigenous and peasants’ cosmovision, agriculture, and sustainability aspects. Teacher's role is mainly to mediate, facilitate and guide the teaching and learning process, allowing students to build and self-regulate their own learning, based on their previous knowledge. The student is active, the teaching-learning process is collective and socialized, as it fosters social integration and enhance learning and respect.

Along the course the expository method is used both by the professor and by students, individually and in groups, always promoting the participation of the students through their direct intervention in discussions, extension of concepts and analysis of the topics exposed. This course wills intent to integrate an open opportunity to expand more awareness into the indigenous ecology, agriculture, and sustainability issues. The importance of promoting education to enable sustainability, the need to explore, test and choose alternatives and learn from these processes, contribute to the further-below showed learning strategies.

EDUCATIONAL RESOURCES

To guarantee good development of the course, therefore, to guarantee learning, the following resources are available: An updated bibliographic database, multimedia equipment that students can use for their individual presentations; whiteboards and other school equipment for weekly sessions, and readings provided by the educator. All of these complement the suggested projects and provide the students with higher possibilities of knowledge own ship. Lessons will take place in the classroom and on the field. Students have access to the institution's library during opening hours' study areas or computer labs and any other convenient area on the university's campus for individual study. Likewise, the university provides free Wi-Fi access to all students, professors, and staff throughout the campus.

The university also places the CANVAS Learning Management System at the disposition of students and staff ensuring pedagogical flexibility making it easier to integrate new technologies into the courses and always ensure seamless and effective communications between the student and professor through an app center.

LEARNING EVALUATION

To make this course better, competencies' based evaluation, compiles and evaluates evidence by considering feedback providing pre-established criteria. The evaluation of the course must be consistent with the teaching competencies and methodology. There is a

rubric for each evaluation resource, and the details will be provided in **CANVAS LMS**. Even though the rubric grants a grade, it is also a quantitative and qualitative description of the students' performance. The rubrics include the core and discipline key competences.

LEARNING EVALUATION ITEMS	WEIGHTING
Unit 1: <ul style="list-style-type: none"> ○ Readings and thematic discussions (15) ○ Learning journals presented orally (15) 	30%
Unit 2: <ul style="list-style-type: none"> ○ Documentary analysis (15) ○ Learning journals presented orally (15) 	30%
Unit 3: <ul style="list-style-type: none"> ○ Study cases 'analyses (15) ○ Learning journals presented orally (15) ○ Fieldtrips/workshops' report and discussion (10) 	40%
TOTAL:	100

LEARNING STRATEGIES

The following learning strategies will be developed:

(1) Reading's discussion and oral presentations:

Oral presentations of synthesis made from assigned readings and their discussion, will allow the students to show their understanding in topics assigned in the different units of the course. The discussion of selected themes and readings seeks to develop the competence of learning using lateral and creative thinking, fostering the critical reflection of a text. Reading between lines, reflecting, interpreting, proposing hypotheses, among other processes, allow the student to understand the world and reconfigure it, reconstruct it and interpret it, with the final intention of providing a new perspective that solves a concrete

reality. Students will come to class prepared to share an oral synthesis of the material read (no PPT required), supported with two main aspects that call him/her the attention. A main formal session of group reading discussion is included at the end of the first unit.

(2) Learning journals:

This is an instrument for the reflection of concepts and experiences for the student. A personal journal is developed by each student as a document that contains her/his experiences in the country as a type of learning journal; to be done during the length of the class; along the whole term. It should show challenges and reactions to class activities along the term. Each journal's oral presentation is expected to have five main reflections (that can be supported with pictures, graphics, or sketches) where the concepts and experiences acquired will be evidenced (PPT required). Three main individual journals' presentations will be assessed along the term, one per unit.

(3) Analysis of documentaries and of study-cases:

Guided analysis of documentaries and of case studies allow students to come to a broad and shared understanding of a situation. These tools while helping students understanding the interdependencies between indigenous knowledge, food, ecology, the bio-physical world, and the planet's health, also educate students in three essential aspects: knowledge management, reflective practices, and the ability to adapt to change. Different current and motivational documentaries related with the topics of this class, and study case papers, will help students to demonstrate the group's understanding of issues of interest. These analyses while demonstrate the comprehension of issues of interest, also provide an occasion to practice oral communication –an opportunity for the students to connect orally sharing the results, feelings, and improvement sensations regarding their learning process. Two Power Point (or any other appropriate presentation platform) documents will be elaborated in this class; all information required will be assigned at the beginning of the class. As a part of collective, participative and guided-learning-activities, two group-analyses

are included in this course: The documentary analysis presentation is done at the end of unit 2 and that of study case at the end of unit 3.

(4) Workshops' and Fieldtrip-experiences' reports:

Fieldtrips, workshops, and visitations facilitate independent learning, the internalization of new concepts and a practical gathering of those covered in class. Fieldtrips also promote students' assimilation, reflection, and the internalization of knowledge, sensitizing through observation and interaction. Academic guided visitations facilitate unique deep learning. Workshop' and fieldtrip' reports are used as an academic writing tool to allow students to express, interpret, and evaluate one or more topics by formally including adequate justification. The point is to explain the sustainability, ecological, cultural, and agricultural knowledge experiences. Another main aim is to show evidence of activities done and to demonstrate the acquired knowledge composing clear explanations. For accomplishing this, one experience's report about the fieldtrips, workshops and practical activities will be developed individually. In this, each student must register:

- Cover page with basic data (student's and course names; places visited and dates)
- Numbered pages and the general format for written assignments.
- Main objectives and methods followed, and main activities done.
- Main learning results achieved should be included, if possible, supported with hand-made pictures and/or with critical reflections.
- A "final conclusion" per visit/workshop/trip will be elaborated, reflecting on the learnings and observations regarding indigenous ecology, agriculture, culture, agroecology, and sustainability.

ATTENDANCE

Regarding classes:

1. Students are only allowed a total of two (2) nonconsecutive (back-to-back) class absences. A student shall fail the course if more than two absences are registered.

2. Three late arrivals to class (within the first 15 minutes) are treated as one absence. Attending class 30 minutes late without an official justification will also count as an absence.
3. In the case of an absence from any assignment evaluated in class (presentations, evaluations, field trips, etc.) a student will be given a grade zero unless an official document is presented within one week of the absence.
4. If a student presents an official document to excuse the absence, the missed assignment is to be presented on that same day.

Regarding field trips:

5. An unjustified absence on a field trip will immediately result in the loss of all points assigned to that specific trip. However, if an official document justifying the absence is presented, 50% of the assignment points may be obtained on presentation of a complementary research assignment, to be agreed upon with the professor, within one week of the field trip.
6. An absence on a field trip may be justified should two course field trips coincide. In such a case, and in order to avoid losing points, students shall be able to opt for carrying out a research assignment.

CODE OF CONDUCT

Professors have the right to expel a student from the classroom if:

1. Be disruptive in the classroom.
2. Behaves in a disrespectful way.
3. Be under the influence of alcohol or even smell like alcohol.
4. Be under the influence of any illegal drug.
5. Shows hygiene problems that may disturb other students.
6. An issue in this area will affect participation grade.

ELECTRONIC DEVICES

The use of cell phones, smart phones, or other mobile communication devices is disruptive, and is therefore prohibited during class. **Please turn all devices OFF** and put them away when class begins. Devices may be used ONLY when the professor assigns a specific activity and allows the use of devices for internet search or recording.

Those who fail to comply with the rule must leave the classroom for the remainder of the class period. If situation happens again, 10 points will be deducted from the final participation grade.

PROGRAM POLICIES

The student must comply with the provisions of the CIPSS Program Policies available on the Canvas platform.

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CHRONOGRAM

Table 5: General schedule for the <i>Indigenous Ecology and Sustainability</i> course; only on regular terms (12 weeks).			
Unit I: Indigenous ecology, agroecology, and sustainability			
Week	Dates	Topic (each week 4 contact-hours)	Evidence of learning
1		Introduction to the course.	<ul style="list-style-type: none"> ○ <i>Journal presentation</i> ○ <i>Thematic discussions</i> ○ <i>Participative lectures</i> ○ <i>Reading's discussions</i>
2		Introductory concepts.	
3		Environmental and sustainability milestones.	
4		Learning activities: <ul style="list-style-type: none"> ○ Reading and thematic discussions ○ Learning Journal presentation 	
Unit II: Costa Rica: The essentiality of sustainable practices			
Week	Dates	Topic (each week 4 contact-hours)	Evidence of learning
5		Forest and the Cocoa case.	<ul style="list-style-type: none"> ○ <i>Journal presentation</i> ○ <i>Participative lectures</i> ○ <i>Documentary analysis presentation</i> ○ <i>Documentary view</i>
6		Coffee, Bananas & Pineapple cultivars in Costa Rica.	
7		Some sustainability solutions from Costa Rica: Urban gardens, composting & Municipality's sustainability programs; Sustainable institutions, ecological blue flag & food waste programs; Agricultural open markets,	

		organic agriculture, and organic fairs; Agroecology in Tropical & indigenous cropping systems; Family farm systems in the countryside and in the cities.	
8		Learning activities: <ul style="list-style-type: none"> ○ Documentary analyses presentation ○ Learning Journal presentation 	
Unit III: Learnings from indigenous ecology: Costa Rica and LATAM study cases			
Week	Dates	Topic (each week 4 contact-hours)	Evidence of learning
9		Study case experiences with indigenous: <ul style="list-style-type: none"> ▪ Location: Conte Burica, CR; Ethnicity: <i>Ngöbe</i>. ▪ Location: Bajo Chirripó, CT; Ethnicity: <i>Cabecar</i> 	<ul style="list-style-type: none"> ○ <i>Journal presentation</i> ○ <i>Participative lectures</i> ○ <i>Study case analysis presentation</i>
10		Study case experiences with peasants: <ul style="list-style-type: none"> ▪ Location: La Selva, CR; Culture: Peasants. ▪ Location: Acosta, CR; Culture: Peasants and agricultural entrepreneurs. 	<ul style="list-style-type: none"> ○ <i>Thematic discussions</i> ○ <i>Interactive readings</i>
11		Study case experiences with indigenous and peasants: <ul style="list-style-type: none"> ▪ Location: Peru, Chile, Bolivia; Ethnicity: Aymara. ▪ Location: Costa Rica, Panamá; Ethnicities and cultures: <i>Cabecar, Ngöbe, Térraba, Brunka, Boruca</i> and Peasants. 	
12		Learning activities: <ul style="list-style-type: none"> ○ Study case analyses ○ Learning Journal presentation 	

Please note that this chronogram is tentative and subject to change.

