



**Center for International Programs and Sustainability Studies**

**Course name: Sustainable Development and Environmental Awareness**

**Course Code: ENV 4040**

**Total contact hours: 60**

**Pre-requisites: None**

### **COURSE DESCRIPTION**

At the end of the 1980s, the world began to analyze that economic development was having irreversible consequences on the environment, natural resources were being destroyed too fast and the socio-economic gap was getting bigger and bigger. At that moment the concept of sustainable development arose, and the world began to work to achieve the balance between economic development, social equity, and ecosystems conservation for present and future generations, on a global scale.

Costa Rica is well known for its conservation policies, and it intends to apply sustainable development concepts, according to international agreements. The country has been a global leader in implementing measures related to conservation and sustainable use of biodiversity. Good practices and aspects to improve at the national level will be analyzed.

This is a course that integrates theoretical knowledge, history, and trends on a national and global scale, with practical activities, which allow people to understand the edges of sustainable development. The student develops the ability to integrate social, economic, and environmental aspects to analyze and solve issues, considering the goals of sustainable development. The course includes discussion of current events, case studies, hands-on activities, and field trips. Together, all these experiences sensitize the

**SUSTAINABLE DEVELOPMENT GOALS**



students to build a better world, not only on a large scale, but also, and even more important, in their personal ways.

## **CLOTHING AND FOOTWEAR REQUIREMENTS**

This course has obligatory field trips, in which some specific cloth and footwear is required: comfortable clothes that can get wet and dirty, rain jacket, closed shoes (tennis or hiking shoes), mosquito repellent, sunblock, water bottle, flashlight and camera (could be the one in the mobile phone).

## **AUDIENCE**

This course is structured for international students attending the Study Abroad Program at an LCI Education university campus. However, courses are not exclusive to foreigners so local degree-seeking students may enroll in this course. Some of the courses are also taught in Spanish as part of our Bachelor's in Sustainability Management or Business Administration programs.

This is a theoretical-practical course and explores/responds to the following inquiry according to the professional/disciplinary profile:

**How to integrate the social, economic, and environmental aspects for the analysis and proposal of solutions to sustainability issues, considering the objectives of sustainable development?**

To answer this question, the following **generative topics** will be studied:

- Introduction to sustainable development
- Conservation in Costa Rica
- Tourism in Costa Rica
- Agriculture: issues and good practices
- Permaculture design
- Climate change
- Sustainable cities

Throughout the course the following **skills** will be promoted:

- Ability to analyze the current national and international situation regarding sustainable development, considering its three pillars: economic development, social equity and conservation of ecosystems
- Ability to integrate practical, social, economic, and environmental aspects in the analysis and resolution of problems related to different productive sectors, taking into account the objectives of sustainable development
- Ability to design productive areas, which have the diversity, stability and resilience of natural ecosystems, applying the permaculture principles
- Ability to build personal criteria considering socioeconomic and environmental perspectives on the information available regarding controversial sustainability issues.
- Ability to apply good practices in productive projects that could be applied to everyday life.

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

- Systemic thinking
- Teamwork and leadership
- Oral and written communication
- Interacting well with others
- Interest in improving processes
- Interest in solving problems
- Logical and communicative intelligence

## **COMPETENCIES, CRITERIA AND 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.

**SUSTAINABLE DEVELOPMENT GOALS**



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

Competencies	Key competences	Learning Assessments
<p><b>Discipline</b></p> <p>Applies systemic thinking to propose solutions to problems related to different productive sectors, considering the objectives of sustainable development.</p>	<p>Analyzes the current national and international situation regarding sustainable development, considering its three pillars: economic development, social equity and conservation of ecosystems.</p>	<p>Current event presentations</p> <p>Case studies</p>
	<p>Integrates practical, social, economic, and environmental aspects in the analysis and resolution of problems related to different productive sectors, taking into account the objectives of sustainable development</p>	<p>Case studies</p> <p>Design activities in groups: incentive program design, permaculture design, sustainable cities design</p>
	<p>Builds personal criteria considering socioeconomic and environmental perspectives on the</p>	<p>Case studies. Online discussions</p>

	information available regarding controversial sustainability issues.	
	Ability to design productive areas, which have the diversity, stability and resilience of natural ecosystems, applying the permaculture principles	Design activities in groups: Permaculture design practice and field trip, sustainable city design
	Applies good practices often used in productive projects that could be implemented to everyday life	Design activities in groups: incentive program design, permaculture design, sustainable cities design Field trips
<b>Core/Generic</b>		
Integrates knowledge, skills, and attitudes to learn continuously and through one's life pursuing an efficient development in the knowledge-based society.	Learning to learn	Current event presentation and group discussion Design activities in groups: incentive program design, permaculture design, sustainable cities design
Builds the necessary knowledge, skills and attitudes to learn how to communicate orally and in written form in the	Communicate thoughts of the discipline orally, in an iconic way, and in written form.	Current event presentation and group discussion Design activities in groups (report and presentation)

different disciplines that make up the curriculum.		
Integrates the necessary knowledge, skills, and attitudes to learn teamwork and leadership techniques.	Execute teamwork and leadership.	Case studies Design activities in groups Field trips
Integrates the necessary knowledge, skills and attitudes to learn interpersonal communication techniques.	Relate well to others Manage and solve conflicts Negotiate reliably and empathetically Speak responsibly Listen attentively	Case studies Design activities in groups Field trips

## **COURSE CONTENT**

### **Unit 1. Introduction**

- Introduction to the tropics: climate, biodiversity hotspots.
- Introduction to Costa Rica: general aspects.

### **Unit 2. Introduction to sustainable development:**

- General concepts, the three pillars of SD, history.
- The sustainable development goals.
- Sustainable development report.
- Sustainable production and consumption.
- Ecological footprint.

### Unit 3. Conservation in Costa Rica:

- National System of Conservation Areas.
- Habitat fragmentation, biological corridors, private preserves.
- Payment of Ecosystem Services.
- Case study.

### Unit 4. Tourism in Costa Rica:

- Sustainable Tourism concepts.
- Certification of Sustainable Tourism (CST), Blue Flag Program.
- Group activity: designing an incentive program.

### Unit 5. Agriculture: issues and good practices

- Introduction to food production.
- Conventional agriculture, the main exportation products: production, environmental issues.
- Organic agriculture.
- Soils and composting.
- Food and water security.
- Workshop: oyster mushroom production.
- Workshop: fermented food and drink.

### Unit 6. Permaculture design

- Permaculture: concept, ethics, principles.
- Elements analysis.
- Design process.
- Group activity: permaculture design field trip and practice.

### Unit 7. Climate change

- Climate change: concepts, impacts, challenges.
- Energy production (biofuels, hydroelectric, wind power, solar power, biomass, geothermal).
- Transport system.

- Costa Rican National Decarbonization Plan.
- Case study.

#### **Unit 8. Sustainable cities:**

- Sustainable business.
- Circular economy.
- Sustainable cities basic concepts
- Group activity: designing a sustainable city

### **METHODOLOGY**

The course is theoretical and practical. The methodology is planned according to the competency-based model. The role of the professor is to mediate, facilitate, and lead the teaching and learning process. The students' participation during class session is key for the achievement of the proposed competences. Collaborative techniques are developed, where both, professor, and student, cooperate for the co-creation of the course products, in this way the communication between the professor and students is two-way between equals.

The course will include lectures by the professor in order to explain main concepts, historic facts, and specific examples related to sustainable development at the national and international level. Current events about Costa Rica will be analyzed and discussed in class. At the end of each unit, group discussions will be performed, through case studies, group activities, debates, and online discussions, in order to analyze specific situations from different points of view and propose solutions. Besides, students will have the opportunity to improve their research and exposition skills, share their ideas and manage group discussions. Teamwork skills will be strengthened during field trips and design activities in groups. Field trips are the most important complement to the theory learned in class, through them, students can see and practice some of the concepts of sustainable development and perform hands on activities in the field. Finally, some speakers will be invited to talk about specific topics on which they have years of experience.



## EDUCATIONAL RESOURCES

In order 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. The classroom lessons are complemented by field trips, online discussions, and a workshop.

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 ensure seamless and effective communications between the student and professor. The professor will make available to students, through the CANVAS platform, the presentations, videos, readings, and other material used during class.

On the other hand, for online sessions and interactions there are some platforms available, for example teams and Miró.

During independent work periods students will be able to attend the institution. A campus library, study rooms, and computer labs are available for the students' independent work time. Free Wi-Fi connection for students, educators, and staff is provided on campus, which gives students the possibility to work not only in the library or computer labs, but also around campus.

## LEARNING ASSESSMENT

In order to make the course or program better competencies-based evaluation compiles and evaluates evidence by taking into account feedback providing pre-established criteria. The course evaluation must be aligned with the competencies and the teaching 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.

RUBRICS	PERCENTAGE VALUE
<ul style="list-style-type: none"> <li>○ Class, online discussions and field trip participation</li> </ul>	<b>10%</b>
Design activities in groups (30% each one): <ul style="list-style-type: none"> <li>○ Permaculture design</li> <li>○ Incentive program</li> <li>○ Sustainable cities</li> </ul>	<b>90%</b>
<b>TOTAL</b>	<b>100%</b>

Minimum final grade to approve the course is 75%

## LEARNING STRATEGIES

### 1. General format for reports

According with their learning styles, student will be able to choose how to present the assignments' reports. The options to choose are: paper, video or infographic. All reports must be uploaded in the CANVAS platform before midnight in the indicated date. Printed reports won't be accepted. It is necessary to follow a specific format for each kind of report.

#### For papers:

- Time new romans 12. 1.5 space.
- Text alignment: justified—text is aligned along the left margin, and letter- and word-spacing is adjusted so that the text falls flush with both margins, also known as *fully justified* or *full justification*.
- Do not include a cover page, instead of it, use a header in the first page that contains Veritas University logo, the course's and student's names, assignment's title, and date.
- Include subtitles to make the structure easy to understand.
- Maximum 5 pages plus images and tables.

- All pictures and tables must be included at the end of the paper and must be cited in the text (for example: “see figure 1”) and a short legend describing the content should be added at the bottom of each picture and at the top in case of tables
- APA format must be used for references inside the text and references’ section.

#### For videos:

- Videos can be recorded with any tools available by the students.
- After recording and editing, the video must be uploaded in a YouTube account and the link must be share in Canvas. It is not necessary to make the video available for all, it could be private.
- Videos must be 10-15 minutes long.
- Students must combine shots of people talking with images (pictures, maps, schemes).
- Videos content must include all the information required by the assignment’s rubric.

#### For infographics:

- Infographics can be developed using any tools available by the students.
- They must be uploaded in Canvas in png or jpg format.
- The report can include one or more infographics, according to the amount of information to be shown.
- Infographic content must include all the information required by the assignment’s rubric.

#### General format for presentations:

- All presentations will be evaluated based on preparation (knowledge assimilation), presentation style (organization, smoothness, oral expression, and clarity), slides (clarity, aesthetics), finishing the presentation in time, conclusions and answering questions.

Competences will be evaluated according to the following rubrics. The best performance for each indicator is explained in order to clarify what is expected from students. The number of points is given to show the weighted value of each indicator. In the observation's column, students will receive detailed feedback and explanations if they obtain a grade lower than the maximum.

### Online discussions, and field trip participation

Current events, case studies online discussions, class and field participation will be evaluated according to respectful and active participation in all classes, activities and field trips. Main activities are described below:

Current events: Students will search for a current event about sustainable development in a Costa Rican newspaper (for example La Nación <http://www.nacion.com/> or Tico Times <http://www.ticotimes.net/> or any other source). It can be a national or an international new with repercussions in Costa Rica. It can be about economics, social well-being or environment. It must be resent, published maximum 6 months before the presentation. The link must be sent to the professor, at least one day before the presentation.

The presentation should be 10 minutes long and include a summary with main topics of the new, analysis (relationship between the event and sustainable development), a personal opinion and a group discussion (it is necessary to prepare some questions for other students to start the discussion). Powerpoint presentation is not necessary.

Case studies: Students analyze specific case studies in Costa Rica. Professor will explain in advance the general aspects about the issue, and students will research additional information about the topic. Students will split in groups according to different points of view, for example: the government, environmentalist, developers, companies or the community, and look for information according to the point of view they chose. During the class, they prepare a general statement and questions. Then the debate and discussion start. At the end conclusions will be build.

Online discussions: Students look for specific information according to professor instruction for each discussion, summarize and share the information with other

students through Canvas platform and analyze and comment other students answers to the discussion.

Field trip: This course includes one or two mandatory field trips (a weekend). Places to visit could vary each trimester depending on factors such as sea turtles nesting season, weather, number of students or lodging availability. Those places could include agro-ecological farms, self-sustainable communities, sea turtle conservation projects, National Parks, clean energy production projects, among others. Field trips might include volunteer work such as planting trees, preparing compost, performing farm work, night species monitoring, etc.

From the beginning of the course, students will know destinations for field trips, and in advance, professor will explain the field trip details, for example: description of the place and projects, location, weather, schedule, activities and things to bring.

Lodging and main meals are covered by the course, but students should bring some extra money to buy water and other individual needs. The mandatory field trips in this course are not excursions and only students enrolled in this course may attend.

Field trips are obligatory. Assistance and behavior during the fieldtrip will be evaluated (punctuality, participation, etc.). Students must be on time for all field trip related activities including departure, return and scheduled meal times.

Students will carry small notebooks to write down anything they see or learn while in the field and what they think about it. Each person's journal will be unique to them: each person will notice different things and everyone could interpret similar things differently.

### **Design activities in groups**

There will be three activities where students have to develop a design to contribute solving specific issues. At the end of each design activity, students have to present the design to the rest of the class (around 10 min) and submit a group report.

### Incentive program:

During class time, students in groups will chose a real issue they would like to improve through an incentive program (similar to CST or Blue Flag incentives explained in class). Students have to define the issue (define a problem statement), design the incentive

program including: name, objective, logo, slogan, who could apply (target public), how to apply, how often, incentive description, how the incentive program impacts could be measured (describe indicators).

### **Permaculture design**

During field trips, students in groups will design a project applying the permaculture ethics, design principles and process. The design must reach the objectives of a hypothetical project in a real piece of land. They must develop the field description, client interview, basic sector analysis, list of elements to be included (with the intrinsic characteristics, needs and yields), and develop a basic base map, permaculture zones map and final design map where they establish the relative location of different elements. This relative location must have a justification based on permaculture principles.

### **Sustainable cities**

During class time, students in groups, will design a sustainable city and build a city model using recyclable materials. They must take into account the three pillars of sustainable development, the sustainable development goals and put in practice everything learned during the course: conservation, biological corridors, tourism, agriculture, permaculture, energy production, transportation.

The population size in this city is around 2 million people.

### **Co-evaluation rubric**

Group work allows people to integrate knowledge, skills and attitudes necessary to learn how to work as a team and obtain the best results possible from a case or topic analysis. It is important that everyone in the group contributes to the practice and the writing of the report in a cordial, respectful, proactive and committed way. The co-evaluation reflects the effort of the group members in their work, both inside and outside the classroom, and allows students to learn to evaluate objectively. Each student evaluates each of their peers and receives an average of peer evaluations. Each student has to include more columns to the table, according to the numbers of members in the group.

## ATTENDANCE

### Regarding classes:

1. Students are only allowed a two (2) **non-consecutive (back-to-back) class absences**. A student shall fail the course if more than two absences are registered by the professor. Administration does not control attendance.
2. Three **late arrivals** to class (arrival after 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 of 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 upon 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 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 should he / she/ they:

1. Be disruptive in the classroom.
2. Behave in a disrespectful way.
3. Be under the influence of alcohol.
4. Be under the influence of any illegal drug.
5. Shows hygiene or odor problems that may disturb other students.

## ELECTRONIC DEVICES

The use of cell phones, smartphones, 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. Using devices while the professor or other peers are lecturing, or presenting is perceived as a lack of interest and disrespectful.

## STUDY ABROAD PROGRAM POLICIES

The student must comply with the provisions of the Study Abroad Program Policies available on the Canvas/Omnivox platform.

## BIBLIOGRAPHY

Certification for sustainable Tourism (CST). (2014, August 2014). Retrieved from <http://www.turismo-sostenible.co.cr/>



Earth Science Communications Team, NASA's Jet Propulsion Laboratory, California Institute of Technology. NASA Global Climate Change. Retrieved from <http://climate.nasa.gov/>

Global Peace Index (n.d.). Retrieved from <https://www.visionofhumanity.org/maps/#/>

Hemenway, Toby. (2009). *Gaia's Garden: A Guide to Home-scale Permaculture*. White River Junction, VT: Chelsea Green Pub.

Holmgren, D. (2002). *Permaculture: Principles & Pathways Beyond Sustainability*. Permanent Publications.

Janzen, H.D. (1983). *Costa Rican Natural History*. United States of America: The University of Chicago Press.

Langholz, J., Lassoie, J. & Schelhas, J. (2000). Incentives for Biological Conservation: Costa Rica's Private Wildlife Refuge Program. *Conservation Biology* 14(6), 1735-1743

Millennium Ecosystem Assessment. (2005). *Ecosystems and Human Well-being: Synthesis*. Retrieved from <https://www.millenniumassessment.org/en/index.html>

Programa Estado de la Nación. (2021). Informe del Estado de la Nación. Retrieved from <https://estadonacion.or.cr/informes/>

Rojas, A. L. & Chavarría M.I. (2005). *Corredores Biológicos de Costa Rica*.

Sachs, J. D. (2015). *The age of sustainable development*. Columbia University Press

United Nations. (ND). Sustainable development goals. <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

United Nations. (1987). *Our common future (The Brundtland Report)*. Retrieved from <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>

United Nations. (2012). *The future we want*. Retrieved from <https://sustainabledevelopment.un.org/content/documents/733FutureWeWant.pdf>

United Nations Environmental Program. (n.d.) *Agenda 21*. Retrieved from <https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>

University of Yale (n.d.). Environmental Performance Index. Retrieved from <http://epi.yale.edu/>

## CHRONOGRAM

Week	Contents	Evidence of learning
1	Welcome. Syllabus overview. Introduction to the tropics and Costa Rica	Professor's exposition. Participatory discussion.
	Introduction to Sustainable Development. Concepts, goals and report overview	Professor's exposition. Participatory discussion. Interview. <b>Online discussion #1</b>
2	Sustainable development goals and report	<b>Interview results. Student's presentations about the goals.</b> Participatory discussion. Tedtalk analysis.
	Sustainable consumption and production. Ecological footprint Waste of the future part I/ Seaspiracy	Professor's exposition. Teamwork.
3	Product Lifecycle Waste of the future part II	Documentary analysis. <b>Online discussion #2</b>
	Conservation in Costa Rica / Habitat fragmentation, biological corridors, PES	Professor's exposition. Participatory discussion.
4	Case study 1: Use of sea turtle eggs from Ostional Wildlife Refuge. / Sustainable tourism. CST Blue flag	Participatory discussion. Professor's exposition. Participatory discussion.
	<b>Design an incentive program.</b>	Teamwork
5	Incentive program presentation.	<b>Students presentation: incentive program.</b>
	Conventional and organic agriculture	Professor's exposition. Participatory discussion.
	FIELD TRIP	Teamwork
6	<b>Workshop: Oyster mushrooms production</b>	Teamwork. <b>Incentive program report and coevaluation</b>

	Soils and composting workshop: open small holes in the bags	Professor's exposition. Participatory discussion.
7	Food and water security	Professor's exposition. Participatory discussion. <b>Online discussion #3</b>
	Food production. <b>Workshop: Fermented food</b>	Team work
8	Permaculture ethics and principles. / <b>Workshop: move the mushrooms to production room</b>	Professor's exposition. Participatory discussion.
	Sector and Elements Analysis.	Professor's exposition. Teamwork
9	Map of interactions. Permaculture design.	Professor's exposition. Teamwork
	Climate change and energy production	Professor's exposition. Participatory discussion.
	<b>FIELD TRIP Permaculture Design project and presentation</b>	Teamwork
10	Transport system and decarbonization plan. Worskshop: <b>Mushrooms harvesting</b>	Professor's exposition. Participatory discussion.
	Case study 2: Geothermal production in Protected Area. /Cities of tomorrow: new cities	Participatory discussion. Documentary analysis
11	Cites of the future	Documentary analysis. <b>Permaculture Design report and coevaluation</b>
	<b>Design a sustainable city</b>	Teamwork. <b>Online discussion #4</b>
12	Sustainable business. Circular economy. <b>Workshop: Mushrooms second haversting.</b>	Professor's exposition. Teamwork. Documentary analysis. <b>City design report</b>
	City design presentation	<b>Student's presentations: sustainable cities. City design coevaluation</b>