

**Elective course**  
**AGRICULTURE AND ENVIRONMENTAL ISSUES**

**A special program for Montana University**  
**Six weeks: 3 credits (60 hours)**  
*Including lectures & practical classes on field trips*

**A. COURSE PROPOSAL AND OBJECTIVES:**

**Description:**

This course will provide students with knowledge of the main and current agricultural and environmental problems faced by Costa Rican society. Subjects such as the following will be discussed:

- Agricultural and economical problems studied through explorations at a banana plantation, coffee farm and other field work visits and volunteers activities,
- Indigenous tribes' agricultural systems and sustainable development,
- Emergent economic means, such as agritourism and Ecotourism within the sustainable development framework.

**General and Specific Objectives:**

1. Introduce the student to main agricultural and environmental problems and their socioeconomic implications, using Costa Rica as an example.
  - a. To obtain a general overview of Costa Rican agriculture and environmental issues in the region.
  - b. To obtain insight into Costa Rican agro-culture.
2. Study the relationship between environment and agriculture by means of visiting different locations (in order to obtain a real, hands on and vivid exploration and experiences) and through class discussions.
  - a. To obtain a general frame to compare agricultural and environmental issues to Central American and global issues.

## **B. METHODOLOGY AND SYLLABUS:**

### Students will learn by:

1. Classroom instruction and guidance in relation to the main themes.
2. Active participation and execution of a research project in a related subject of their choice.
3. Observation and analytical discussion of videos, such as: *Vicugna production in Argentina (2003)* and *the Chiquita organic banana promotional campaign*.
4. Participation in field trips, volunteer opportunities and on site exercises that will allow students open their minds for a better and deeper understanding of Latin American problems regarding environment and agriculture.
5. Encouragement to explore Costa Rican newspapers and resources for relevant information.
6. Help and support to build their Spanish vocabulary and practice, linked to class themes by introducing Spanish texts and encouraging the use of Spanish on field trips (all levels welcome).

### Study Themes:

#### **I. Costa Rica: Natural History, Ecology, Geography, Land use, The People, and Development Periods.**

Introduction to the natural history of Costa Rica: its origin, geomorphology, climate, life zones, biodiversity and main crops and ecosystems.

Indigenous people and conservation issues, indigenous home-gardens.

Shifts in agriculture and land use.

Introduction to Colonial land use and Crops.

#### **II. Agriculture, Environmental and Development Specifics:**

Sugar cane, Cacao and Tobacco trials

Rise, development and current trends of the Gold Grain in Costa Rica (Coffee)

The Banana Industry: Past and Present

Cattle, Deforestation and Environmental impacts.

The Green Revolution (2<sup>nd</sup> half of 20<sup>th</sup> century, increase of chemicals and pesticides after World War II)

Agricultural Diversification and the Western Vision.

The Birth of Ecological trends in Costa Rica and Central America

#### **III. Costa Rica's Conservation and Sustainable Development Issues:**

Conservation and agriculture in Central America, a Costa Rican view.

Conservation History, Environmental services and conservation policies in Costa Rica.

Encompassing conservationist and socio-economical interests.

Ecological, Organic and Sustainable Agriculture.  
 Grassroots Organizations, Gender Issues and People’s Participation in Sustainable Development.  
 Agro-tourism and Eco-tourism: Show case – El Yüe, Hone Creek and Mighty Rivers.  
 Organic Farming – Organic coffee and Bananas.

**IV. Contemporary Issues and Conclusions.**

CAFTA, Land use and Environmental Issues.  
 Climate Change and Costa Rica: Problems and Policies Explored.

**C. SPECIAL ACTIVITIES:**

Some of the following options will be scheduled:

- Visiting a Coffee/Banana (or both) Plantation.
- Cartago: Potatoes and processing plants. A visit to the potato region and a coffee processing plant.
- A day or weekend in a rural village volunteering for the farmers of San Miguel: Milking Cows and Preparing the Plantation.
- Visiting CEDECO (ecological agriculture NGO or another environmental organisation).
- Visit to InBio Parque
- A weekend visit and volunteering at Mighty Rivers Eco-Organic Cattle farm or a similar Agri-tourism initiative.

**E. EVALUATION:**

Active Participation (classes, homeworks and field trips) .....	20 %
Field trip reports and discussion .....	15 %
Class Readings and discussions .....	15 %
Term paper (oral and written) .....	20 %
Mid term Quiz .....	15 %
Final Quiz .....	15 %

## Class Content

<i>Week One</i>	<i>Session Content</i>	<i>Reading and Assignments</i>	<i>Class Readers</i>
<b>PART ONE</b>	<b>Costa Rica: Natural History, Ecology, Geography, Land use, The People, and Development Periods.</b>		One selected person to read, summarize and present the designated article. Find support material and hand in a brief summary – or post it on the portal – start a discussion about your theme.
<b>Session 1</b>	<b>Introduction to the course. Case study and class reading assignments defined and assigned.  Eco-quiz</b>	Students invited to talk about their Latin American and Costa Rican historical, environmental, agricultural and cultural knowledge.	
<b>Session 2</b>	<b>Costa Rica's Natural History: Its origin, geomorphology, climate, life zones, biodiversity and main crops and ecosystems.  Brief History and Overview. Major concepts introduced.</b>	<u>Assignment 1:</u> Write a paragraph about how you view the Costa Rican environment and related issues - To hand in and discuss next session.  <u>Reading:</u> Coates (1997) chapter 3 Central American landscapes.	The remainder of the group – read the article ready for discussion and to prepare for quiz.  Everyone prepare to comment on this first reading.
<b>Session 3</b>	<b>Pre-Columbian era, indigenous agriculture and environmental issues.  <u>Group Work:</u> Discuss assignment 1.</b>	<u>Reading:</u> 1) Molina and Palmer (2006) Chapter One: Trails of the First Peoples. 2) Coates (1997) chapter 6 The native Peoples of Central America During Pre-Columbian and Colonial Times.	*  *
<b>Session 4</b> Field Trip (double session)	<b>Introduction to Colonial times, agricultural and environmental change. Cartago Tour: Potatoes and Processing Plants.  <u>Assignment:</u> To complete the field trip questionnaire by next session, and be ready to discuss.</b>	<u>Reading:</u> 1) Perez-Brignoli, H. (1989) Chapter 2. The Colonial Past. 2) Molina and Palmer (2006) Chapter 2: Cacicazgos and Senorios (1500-1570) and Chapter 3 Conquest and Resistance.	*  *

<i>Week</i>	<i>Session Content</i>	<i>Reading and Assignments</i>	<i>Class Readers</i>
<b>PART TWO</b>	<b>Agriculture, Environmental and Development Specifics:</b>		
<i>Session 5</i>	Pay Back Session		
<i>Session 6</i>	<b>Sugar cane, Cacao and Tobacco trials. The Rise and Development of the Gold Grain in Costa Rica (Coffee).</b>  <b>Field trip feedback and discussion</b>	<u>Reading:</u> 1) Molina and Palmer (2006) Coffee, Capitalism and the Liberal State. 2) Coates (1997) chapter 7 Spanish Rule, Independence, and the Modern Colonization Frontiers.	*  *
<i>Session 7</i>	<b>The Costa Rican Banana Industry.</b>	<u>Reading:</u> 1) Pierre A. D. Stouse, Jr. Instability of Tropical Agriculture: The Atlantic Lowlands of Costa Rica	*  *
<i>Session 8</i>	<b>Cattle, Deforestation and Environmental impacts.</b>	<u>Reading:</u> Newspaper articles (Spanish Practice: Agricultural and Environment vocabulary Explored)	
<b>Weekend Field Trip</b>	<b>Hands On Opportunity in San Miguel. Small Scale farming – Cows and Coffee.</b>	<u>Assignment 2:</u> To complete the field trip exploration research task/questionnaire.	

<i>Week Three</i>	<i>Session Content</i>	<i>Reading and Assignments</i>	<i>Class Readers</i>
<i>Session 9</i>	<p><b>The Green Revolution and its Impacts: Agricultural Diversification/ Non-traditional Agro-export crops.</b></p> <p><b>Field trip follow up and hand in Assignment 2</b></p>	<p><u>Reading:</u> Roberts and Thanos (2003) Chapter 3 Green revolution, Deforestation and New ideas.</p>	*
<i>Session 10</i>	<p><b>Research Papers First Draft Presentations.</b></p> <p><b>Quiz preparation.</b></p>	<p><u>Assignment 3:</u> 10 minute presentation of research project idea. First draft summary to be handed in.</p> <p>Prepare for the quiz.</p>	
<i>Session 11</i>	<p><b><u>Mid-Course Quiz.</u></b></p> <p><b>Activity: Computer Lab Session: Access La Nacion Newspaper archive – search for Costa Rican environmental issues</b></p> <p><b>and</b></p> <p><b>Prepare for field trip activity- put together interview questions in Spanish.</b></p>	<p><u>Assignment 4:</u> Interview a Costa Rican at Inbio Parque and at least two other Costa Ricans to see what they think about Costa Rica’s environmental and conservation issues.</p>	
<i>Session 12 Field Trip (double session)</i>	<p><b>A visit to InBio Parque. Exploring Forest Ecology and the National Conservation and Environmental Research Goals.</b></p>	<p><u>Assignment 5:</u> Complete the InBio Parque Questionnaire.</p>	

<i>Week</i>	<i>Session Content</i>	<i>Reading and Assignments</i>	<i>Class Readers</i>
<b>Week Four</b>	<p><b>PART THREE</b></p> <p><b>Costa Rica's Conservation and Sustainable Development Issues:</b></p>		
<i>Session 13</i>	<p><b>Conservation History and Environmental services and conservation policies in Costa Rica. (Protecting Volcanoes to the IPN)</b></p> <p><b>Group Work:</b> Interviews discussed and Articles to be presented.</p>	<p><u>Reading:</u> Bruggerman, J. (1997) National Parks and Protected Area Management in Costa Rica and Germany: A Comparative Analysis. From Ghimire and Pimbert (1997) Social Change and Conservation.</p> <p><u>Assignment 6:</u> Students to have found articles on Costa Rica's Conservation and environmental issues to present in this class.</p>	<p>*</p> <p>All students.</p>
<i>Session 14</i>	<p><b>Costa Rica's Sustainable Development Policy and Goals: Impact on land uses. Introduction to Ecological, Sustainable Agriculture. Organic farming – organic coffee, bananas, and other products –agricultural methods defined.</b></p>	<p><u>Reading:</u> Collection of newspaper articles. (Spanish Practice)</p>	<p>*</p>
<i>Session 15</i> <i>Field Trip</i> (double session)	<p><b>Volunteer Session at a School Huerta or visit to Agricultural/environmental Ministry or Agricultural/Environmental organization (Students to choose depending on interest and availability)</b></p>		
<i>Session 16</i>	<p><b>Pay Back Session</b></p>		

<i>Week</i>	<i>Session Content</i>	<i>Reading and Assignments</i>	<i>Class Readers</i>
<i>Week Five</i>			
<b>Session 17</b>	<b>Grassroots Organizations, Gender Issues and People's Participation in Sustainable Development.</b>	<p><u>Reading:</u> 1) Redclift, M Chapter 2 <i>Sustainable Development and Popular Participation: A Framework for Analysis.</i> From Ghai and Vivian (1995)</p> <p>2) <u>Reading:</u> GENDER – collection of articles (Spanish Practice)</p>	
<b>Session 18</b>	<b>Agro-tourism and Eco-tourism: Show case – El Yüe, Hone Creek and Mighty Rivers.</b>	<p><u>Reading:</u> Honey (1999) Chapter 5 Costa Rica On the Beaten Path. From Ecotourism and Sustainable Development: Who Owns paradise? Island Press, Washington.</p> <p>More to be handed out or links posted on academic course portal.</p>	*
<b>Session 19</b>	<b>Research Preparation Session and Support /and possible Catch Up Session</b>	Students to come prepared to discuss research challenges and progress.	
<b>Session 20</b>	<b>Pay Back Session</b>		
<b>Week End Field Trip</b>	<b>Exploration and Volunteer work at an Agro-Eco-Finca</b>	<u>Assignment 7:</u> To complete the field trip exploration research task/questionnaire.	

<i>Week Six</i>	<i>Session Content</i>	<i>Reading and Assignments</i>	<i>Class Readers</i>
<b>PART FOUR</b>	<b>Contemporary issues and Conclusions.</b>		
<i>Session 21</i>	<b>CAFTA, Land use and Environmental Issues.</b>	<u>Reading:</u> Shamsul Haque, M. The Fate of Sustainable Development under Neo-Liberal Regimes in Developing Countries	*
		<u>Assignment:</u> Students to find articles on CAFTA and environmental issues to present in this class.	All students.
<i>Session 22</i>	<b>Climate Change and Costa Rica: Problems and Policies Explored</b>	<u>Reading:</u> collection of articles (Spanish Practice)	*
<i>Session 23</i>	<b>Conclusions / final Quiz /Research Project presentations</b>		
<i>Session 24</i>	<b>Research Project Presentations.</b>		

## **TERM PAPERS**

### Definition:

The term paper is a report based on an agricultural/environmental research conducted through:

- Interviews or informal conversations
- Observations with guides or participant-observation
- Field experiences with this or other courses
- URL sites, internet research information
- Documented information with references (books, papers,...)
- Videos/DVDs from Libraries or Internet

This work is done on an individual basis (or 2 people splitting the subject). The same work is used for two ORAL presentations and for a WRITTEN FINAL paper.

### Guidelines:

Term paper should be no more than ten pages maximum containing:

- 1) Summary (a brief view of each part of your project, no more than 250 words in English or no more than 300 in Spanish),
- 2) Introduction (ending with the objectives and the justification of your project; max. 2 pages),
- 3) Contents (including as the final point your critical analysis of concepts/ideas/the study case you've dealt),
- 4) Conclusions (which should reflect the objectives of your introduction; max. 2 pages)
- 5) Bibliography.

### Topics suggested:

- Sustainable agriculture
- Management of natural resources.
- Current Coffee situation.
- The Bananas side.
- Health and agriculture/environment.
- Cacao as a conservation tool.

### Oral presentations:

Final oral presentation is a 10-15 minutes oral explanation with audio-visual aids, such as power point, slides, videos, photographs, over-heads, written info on craft-paper, etc...