



**Consortium for
Sustainability**

**MICHIGAN STATE
UNIVERSITY**

Course name: *Making Agriculture Sustainable: Understanding Challenges and Finding Solutions*

Professor: *Freddy Gamboa, MAB*

Code: *CUL 501*

Term/Year: Summer 2017

Number of Credits: 3

Course Description:

This course provides an overview of sustainability, focusing on the impact that agricultural systems have on the environment, society and economy. In this course we will look at several systems, their positive and negative aspects, trying to give students enough tools for them to judge the way forward.

Agricultural systems, whether organic or conventional, are nowadays not considered the best way to produce food. Sustainable should be a good mix of both systems. However, how do we decide when a system is sustainable? 5-10 years from now? What do we do in the mean time? Do we change the system in the process? Those are questions we don't have a right or wrong answer for. This course will give students enough information to develop criteria on them so that everyone has an answer to the question: What makes an agricultural system sustainable?

This two week course includes activities in which students will explore ways to improve human welfare, increase productivity as well as reduce environmental impacts. It is designed, mainly but not exclusively, for undergraduate students from any major interested in learning about the principles of sustainability and strategies to promote it. Students will be exposed and become familiar with a variety of tropical agro ecosystems.

Students will spend part of the course interacting with EARTH students and faculty, getting involved in field projects and visiting farms dedicated to different agricultural goods, with different intensity of exploitation of natural resources, and evaluate their impact from a sustainable standpoint (environmental and socio-economic aspects). Additionally, they will have the opportunity to: 1) acquire basic Spanish and learn about Latin American culture and 2) they will be able to visit and interact with nearby communities and to learn about the challenges they face.

Although class work and readings are required, learning will rely heavily on field experience and practical assessment of production systems.



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Main Objective:

Students will learn about alternative production strategies that promote sustainable growth and environmental protection.

Learning Objectives:

At the end of the course, students should be able to:

1. Articulate a personal vision of Sustainability
2. Comprehend the impact of modern agriculture on society and the environment.
3. Experience and learn about sustainable development practices in Costa Rica.
4. Propose and describe different strategies to promote sustainable development on farms.
5. Reflect on their participation and engagement in agricultural production activities.
6. Reflect on certain aspects of Latin American culture they will have experienced during the course.

Activities

- a. Visits on EARTH's main campus in Guácimo and La Flor EARTH's campus in Guanacaste; farms: banana, rice, mango, pineapple, vegetables; organic farms, and nearby communities.
- b. Assignments: Weekly reports, classroom and field activities, as well as oral presentations.



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Instructor's bio

Freddy Gamboa MAB, Costa Rica, - Instructor

Freddy Gamboa graduated from EARTH University in 1995 as an agronomist, after which he worked for a spice trade company (black pepper and red pepper) for six years.

In 2001 he founded his own consulting company with a concentration on soil fertility, plant nutrition, and integrated pest management. He is also a consultant on organic pineapple, roots and ornamental plants.

In 2007, he founded his own organic pineapple company in his native San Carlos, and currently exports his produce to Europe. He recently obtained his Master's degree in Agribusiness.