



BRAZIL
Permaculture at Ecocentro IPEC

SUMMER TERM 2012
June 5 – June 27, 2012

ACADEMIC CURRICULUM



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Course Overview

Students on this program study abroad in South America and investigate new ways of creating sustainable human habitats at Ecocentro IPEC- a grassroots ecological institute in tropical central Brazil. Learn permaculture principles and create your own unique ecological design as you study and apply sustainable community development theory in a real-world environment.

The course offers a unique opportunity for students to gain environmental and international experience and the inspiration to adapt appropriate technologies and sustainable agriculture techniques to their own climates and cultures. Students receive four transferable college credits in one of the best places to study permaculture and sustainability in Latin America. Students who complete the program become Certified Permaculture Apprentices, able to receive a [Diploma of Permaculture Design](#) after 2 years of applied work.

Ecocentro IPEC as Community

Ecocentro IPEC began on a bare, degraded cattle pasture in 1998 to teach and demonstrate permaculture and to apply this information in the construction of a prototype ecological village. The community exists on 25 hectares (60 acres) of land and is located in Pirenópolis in the state of Goiás, central Brazil. Ecocentro IPEC is connected to the national university in Brasília as well as many government ministries, schools and other non-profit organizations. Ecoversidade is IPEC's educational arm and is dedicated to education for sustainable living by fostering a profound understanding of the natural world, grounded in direct experience, that leads to sustainable patterns of living. Ecoversidade functions as a model of viable rural settlement, incorporating the appropriate technologies, living systems and sustainable community life.

Through the dedication of community members, students, adventurers and volunteers working together, Ecocentro IPEC has become one of the most important reference centers for sustainable living in Latin America, demonstrating that another future is possible. Ecocentro IPEC presents practical solutions with over 15 ecological buildings, composting toilets, water treatment system, ecological gardens, food forests and renewable energy system on a site that is less than 10 years old!

Permaculture at Ecocentro IPEC

Department: Natural Resources Conservation

Course Number: NRC 398P

UMass Faculty Sponsor: John Gerber, Ph.D.

Living Routes Faculty: Lucy Legan, M.Ed., Andre Jaeger Soares, M.S.,
Hildegard Magdalena Klever Krause, Ph.D.

Term: Summer 2012

Credits: 4

Course Description

Permaculture stands for permanent culture. It is a system of applied design for the creation of sustainable and ecological human habitat. It is the use of ecology as the basis for designing integrated systems of food production, housing, appropriate technology, and community development. Permaculture is built upon the ethics of caring for the earth, caring for people and sharing resources. Through experiential, participatory and classroom learning, participants will explore the relationships between personal, social, and ecological sustainability in the rich context of life in an ecovillage. This unique program will help students understand how various techniques are being applied in Brazil and at Ecocentro IPEC, while simultaneously considering how to assist communities here in the United States using a permaculture design approach.

Based in Brazil at Ecocentro IPEC, each student will complete a Permaculture Design Curriculum which will include strategies to measure and reduce their carbon footprint and demand for energy while experiencing and working with nature, organic gardening, natural building, compost and soil management, and other ecological approaches. Both theory and practice of ecological living and habitat regeneration will be emphasized along with community building and personal development. Throughout the course there will be opportunities for putting theory into practice and learning practical strategies for living in a low energy future. Each student that successfully completes the coursework will also earn a Permaculture Design Certificate

Course Objectives

Participants will gain information, skills through direct experience needed to:

1. Grasp and integrate permaculture design techniques including:
 - Basic ecological design principles
 - Patterns and processes
 - Ecological integration
2. Demonstrate skill development in several areas:
 - Design skills: base mapping, site analysis and assessment, site design
 - Ecological skills: observation, interpretation, identification, pattern recognition, systems understanding

- Community interaction and participation skills
 - Cultivate the spirit of sustainability in all aspects of life
3. Investigate existing and new forms of living sustainable on the earth by:
- Identifying viable and appropriate materials and technologies adapted to the cultural and geographical diversity
 - Exploring renewable energy and it's viability in different settings
 - Cultivating an understanding of the basic needs of rural life in Latin America
 - Examining the possibilities of new forms of social organizations

Learning Modalities

The faculty of the Brazil: Permaculture at EcoCentro IPEC course use lectures, discussions, site visits, and hands on projects as key strategies to allow each student to develop mastery of course content.

Course Outline

This course offers a unique opportunity for students to gain understanding; knowledge and the inspiration necessary for adopting appropriate ideas and techniques for their own climates and cultures. The following is the order in which conceptual and practical knowledge of Permaculture will be developed over the course of the program.

Concepts and basic themes in design

Introductory study of the major problems facing future societies. As permaculture works with solutions, one must have an overview of the severity of global problems in order to accentuate the need for immediate sustainable action.

- Global realities,
- What is Permaculture and its History,
- Ethics and Principles,
- The passage of permaculture in society,
- Traditional knowledge.

Methods of design

In order to understand the principles of Permaculture, it is necessary to understand the relationship between humans and the ecosystems within which we live. This is an introductory study of energy flows, cycle of materials, and different types of resources.

- Applying natural principles of design,
- Production, cycles and niches,
- Stability, order and chaos, complexity and connection, functions
- Analyze through characteristics and elements,
- Zones and sectors,
- Succession and evolution of systems,
- Establishing and maintenance of a system.



Earth patterns and landscapes components



Study of patterns within nature is especially pertinent for students to begin examining the benefits of imitating patterns within nature when designing a sustainable system.

- Patterns, matrixes and complex strategies,
- Border effect and practical applications,
- Scale and order of magnitude,
- Classification of global climatic zones,
- Soils, gardens, evolving polyculture, food forest, animal tractor systems.
- Practicum: Composting, worms and natural fertilizers.
- Cycle of water, modifications of the landscape to conserve and storage water,
- Appropriate technologies for water storage, transport and heating, evolution of an aquatic system, elements of aquaculture, chinampas and small tanks.

Designing the Human Habitat – Urban and Rural

Most current building takes little or no consideration of the environmental cost and impact of the materials used. This unit offers alternatives to low impact building materials.

- Defining values for appropriate architecture,
- Sustainable habitats,
- Solar design, appropriate materials and techniques, greenhouse production,
- Elements of village design in the tropics, settlement and house design, practicum - cob, straw bale and super abode.



4. In addition to the entry each student is also expected to make at least one substantive comment to faculty or student' entries, to create dialog and expand viewpoints. This should expand on an idea touched upon in the blog or respond in a positive, non-judgmental way with a different viewpoint.

3. Design Project and Presentation

Each student will participate on a team for the design project, but will be expected to submit a written analysis of their groups design products. This analysis should document the process the group underwent, the specific components this student introduced, and lessons learned from this design process. Each student must also participate in the final presentation, and submit a detailed outline of their portion of the presentation.

Active Participation

Each student will be expected to participate in all of the activities scheduled by the instructor. Each of these activities presents an opportunity for learning and will contribute to the students overall grade.

Grading

In this course faculty actively promote multiple means of evaluation and authentic assessment including student self-assessment, peer assessment, and faculty-student debriefs. In order for students to receive credit for this program through the University of Massachusetts, the faculty will submit a letter grade and written evaluation of each student's learning. Participants will furthermore be evaluated according to a demonstrated understanding of the methods, techniques and concepts taught throughout the course as expressed in the assignments listed above.

Learning Journal.....	20%
Design Project and Presentation.....	40%
Weblog.....	20%
Active Participation.....	20%

Course Faculty

Lucia Legan

M.Ed. Science and Environmental Education, Deakin University, Australia
Diplomate of the Permaculture Institute of Australia

Lucy has worked in community development for more than 20 years. Since arriving in Brazil, she has co-founded Ecocentro IPEC. Lucia has authored various educational books on sustainability education. She has recently launched a nationwide program, "Habitats na Escola," which empowers students, parents, and teachers with the skills to create sustainable habitats in school.

Andre Jaeger Soares

Master's candidate in Environmental Education at Griffith University in Brisbane, Australia

Andre is a cofounder of Ecocentro IPEC, trilingual teacher, natural builder and designer. Andre has taught more than 4000 people throughout the country in permaculture design. Andre was acknowledged as one of the 50 most important people in environmental development in Brazil and has worked as an international aid worker in Haiti as a team leader in sustainable development.

Hildegard Magdalena Klever Krause

Ph.D., Sustainable Development of the Humid Tropics, Federal University of Para, Brazil

Hildegard has lived in the Amazon since the age of nine, personally witnessing the vast and varied impacts generated by humans on the forest. Through psychology, she works to increase awareness and empower people to change their behavior and renew their relationship with nature. Through Ecocentro IPEC she came into contact with permaculture and social technologies, and currently serves on the teaching and administrative staff there and at University of the State of Goiás in Pirenópolis.

Required Text

Mollison, Bill. *Introduction to Permaculture*, Tagari Publications, Revised edition (August 1997)

Selected Bibliography

Chiras, Dan, & Wann, Dave. (2003). *Superbia*. British Colombia: New Society Publishers.

Heinberg, Richard. (2007). *Peak Everything: Waking Up to the Century of Declines*. British Colombia: New Society Publishers.

Hemenway, Toby. (2000). *Gaia's Garden: A Guide to Home-Scale Permaculture*. White River Junction, Vermont: Chelsea Green Publishing Company.

Holmgren, David. (2002). *Permaculture: Principles and Pathways Beyond Sustainability*. Victoria, Australia: Holmgren Design Services.

Jenkins, Joseph. (2005). *The Humanure Handbook*. Grove City, Pennsylvania: Joseph Jenkins Inc.

Kunstler, James Howard. (2005) *The Long Emergency: Surviving the Converging Catastrophes of the Twenty-First Century*. New York: Atlantic Monthly Press.

Lerch, Daniel. (2007) *Post Carbon Cities: Planning for Energy and Climate Uncertainty*. Sebastopol, California: Post Carbon Press.

McDonough, W., & Braungart, M. (2002). *Cradle to cradle: Remaking the way we make things*. New York: North Point Press.

McKibben, B. (1995). *Hope, human and wild*. Boston: Little Brown and Company.

McKibben, B. (1999). *The End of Nature*. New York: Anchor Books.

Merkel. *Radical Simplicity: Small Footprints on a Finite Earth*