AGROECOLOGY 11:015:440

Room 138A Foran Hall - Monday 5:35 PM to 8:35 PM

Course Overview and Objectives
This course is designed to introduce various topics of Agroecology including traditional and organic farming, plant and animal production, energy, pest management, specialized and controlled environment agriculture and sustainable practices. This is a “topics” course and class size is small so we will try and have an interactive class environment. All opinions are welcomed and you are encouraged share your views and ideas with the class.

What is Agroecology?
The science of Agroecology, is defined as the application of ecological concepts and principles to the design and management of sustainable agro ecosystems, provides a methodological framework to tackle this task. The central idea of Agroecology is to develop agro ecosystems with minimal dependence on external inputs, emphasizing complex agricultural systems in which ecological interactions and synergisms between biological components provide the mechanisms for the systems to sponsor their own soil fertility, productivity and crop protection. By assembling a functional level of biodiversity (i.e. a collection of interacting beneficial organisms that play key functions within the farm) it is possible to initiate synergisms which subsidize farm processes by providing ecological services such as the activation of soil biology, the recycling of nutrients, the enhancement of beneficial arthropods and antagonists and so on, all important in determining the sustainability of agro ecosystems.
Miguel Altieri - UC Berkley

Student Learning Outcomes for Topics in Agroecology
Be able to conduct a student discussion on the topics presented using information from the readings, education, and personal experience.
Start to recognize one’s own values in regards to food production, trade and consumption and learn how to display those values in one’s consumption habits
Be able to defend one’s values using information learned in this class and/or previous experience
Learn more about Agroecology and the problems the world is facing and will encounter in the future in regards to food production, trade, and consumption
Develop a definition for sustainability as it relates to agriculture.
"The word agriculture, after all, does not mean" Agriscience," much less "agribusiness." It means "cultivation of land." And cultivation is at the root of the sense both of culture and of cult. The ideas of tillage and worship are thus joined in culture. And these words all come from an Indo-European root meaning both "to revolve" and "to dwell." to live, to survive on the earth, to care for the soil, and to worship, all are bound at the root to the idea of a cycle. It is only by understanding the cultural complexity and largeness of the concept of agriculture that we can see...Wendell Berry, The Unsettling of America: Culture and Agriculture (1977)

Course Grading:

Attendance 20% Attendance to class is crucial to success in this course. Topics and readings will be discussed during lecture.

Participation 20% Discussion is an important part of this course. Readings will help the class introduce the class to topics and talk about their ideas and view about issues in Agroecology.

Presentations 30% Students will divide up into teams and develop a class project. Details presented on September 17 and we will make those presentations the last two class meetings.

Critical Paper: 30% Students are required to write a report about various aspects of Agroecology, the paper should be 6 to 8 pages in length plus references, double spaced 10 point type. The paper is due the last day of class.

Academic Integrity:

Students are responsible for understanding the principles of academic integrity fully and abiding by them in all their work at the University. Students are also encouraged to report alleged violations of academic integrity to the faculty member teaching the course in which the violation is alleged to have occurred. The complete text of the New Brunswick Campus Policy on Academic Integrity for Undergraduate and Graduate Students may be found at the following website: http://teachx.rutgers.edu/integrity/

Course Components:

Lectures Lectures are composed of 3 hour sessions in which topics will be introduced and discussed. Readings related to next lecture topic will be emailed prior to class so that we may discuss the topic in question. Usually the first part of the class will be an outside speaker, Dr. Robson will present during the second half. The students will lead the discussion for the particular topic for that evening.

Readings Readings are crucial for success in this course. They are pertinent to topics in the course and will aid in the discussion in topics brought up during lecture.
Critical Paper
Your paper will be 6 to 8 pages double spaced plus references. You may select a topic or chose one from the list below:

*The role of agriculture in the economic development of a region or country and its role in the conservation of natural resources.
*The impact of economic globalization on agricultural sustainability.
*The emergence and impact of rural social movements.
*The importance of incentives and support programs for farmers to create economic opportunities for the conversion to more environmentally sound agriculture.
*The potential of biotechnology in the development and structuring of agriculture, the restructuring of the global market, possible effects on environmental quality, etc.
*Comparisons of organic and conventional agriculture and ways of moving organic agriculture beyond an input substitution model.
*Climate change and agriculture.
*Labor issues and alternative markets in sustainable agriculture.
*Policies conducive to a more sustainable agriculture, etc.

Class Schedule and Readings:

September 10  Monday
Robson
Review of syllabus, course expectations, and video assignment
Intro to Agroecology
Readings:
Sustainable Agriculture: An Introduction
What is Sustainable Agriculture?

September 17  Monday
Robson
Global Agroecology
DVD:  Silent Spring
Readings:
Global Food Production Systems
The Global Food System: A Research Agenda

September 24  Monday
Robson and Harper
Faith Basis of Sustainability
DVD:  Food, Inc.
Readings:
Agricultural Sustainability and Intensive Production Practices
Agricultural Sustainability: Concepts, Principles and Evidence
Environmental Issues in Animals Agriculture

September 29  Saturday
NYC field trip to:
12:00  Riverpark Farm http://www.riverparkfarm.com/Riverparkfarm/farm.htm
1:00   NYC Green Market Union Square http://www.grownyc.org/unionsquaregreenmarket
October 1  Monday
Robson and Winfree
Non-Apis Pollinators and Pollination Ecology
An Assessment of Non-Apis Bees as Fruit and Vegetable Crop Pollinators in Southwest Virginia
Bee Behavior and Pollination Ecology
Pollinator-Dependent Crops: An Increasingly Risky Business
Native Bees Provide Insurance Against Ongoing Honey Bee Losses

October 8  Monday
Robson and Frank
Solar Options in Agriculture
Combining Solar Photovoltaic Panels and Food Crops for Optimizing Land Use
DEALING WITH DISASTERS - FIRST TIME – Cook Student Center 7:00 PM

October 15  Monday
Robson and Brennan
Biofuels and alternative energy
New Jersey’s Energy Master Plan

October 22  Robson and Morin
CSA and Food Systems; Biotech Plants and Animals
DVD:  *Bad Seed*
Readings:
Community Supported Agriculture: Can it Become the Basis for a New Associative Economy?
Cooperatives in a Changing Global Food System
DEALING WITH DISASTERS - SECOND TIME – College Ave Student Center 7:00 PM

October 29  No official class meeting work in groups

November 5  No official class meeting work in groups

November 12  Monday
Robson and Rabin
Sustainable and Organic Agriculture and Marketing
The Increasing Role of Direct Marketing and Farmer Markets for Western US Producers
Principles of Organic Agriculture

November 19  Monday
Student Presentations – First Session
Papers due

November 26  Monday
Student Presentations – Second Session
Mark Gregory Robson, BS, MS, PhD, MPH, DrPH (hc) ATS

Dr. Mark Gregory Robson is the Dean of Agricultural and Urban Programs and Professor of Entomology at Rutgers University-School of Environmental and Biological Sciences and Professor of Environmental and Occupational Health the University of Medicine and Dentistry of New Jersey School of Public Health–School of Public Health. Dr. Robson graduated with a B.S. with High Honors (1977) from Rutgers University - Cook College in Agricultural Science and an M.S. (1979) and Ph.D. (1988) from Rutgers University - Graduate School New Brunswick in Plant Science. He has an M.P.H. (1995) from the University of Medicine and Dentistry of New Jersey - School of Public Health in Environmental and Occupational Health. Dr. Robson also has an Honorary Doctoral Degree in Public Health (DrPH) from Chulalongkorn University (2010). He was elected a Fellow in the Academy of Toxicological Sciences in 2002.

Dr. Robson’s research focus is on exposures to pesticides and agricultural chemicals. Dr. Robson is currently the PI on an NIH-funded Fogarty ITREOH Center in Bangkok Thailand and was the PI on a Robert Wood Johnson Foundation Grant on Tsunami Long Term Relief Efforts. He currently serves or has served on many international, national and state committees on environmental health. From 2003 to 2010 he was the Chair of the New Jersey Drinking Water Quality Institute.

Dr. Robson is a contributing editor for Public Health Reports, and he is on the editorial boards for the International Journal of Occupational and Environmental Health, the Journal of Environmental Health, and New Solutions, a Journal of Environmental and Occupational Health Policy, Chulalongkorn Journal of Health Research and the Journal of Human and Ecological Risk Assessment. Dr. Robson and Dr. William Toscano are the editors of the textbook Environmental Health Risk Assessment for Public Health (Jossey Bass 2007).

Dr. Robson is a member of the Rutgers Graduate Programs in Toxicology, Environmental Science and Entomology, and Plant Biology. He is also a member of the GSE graduate faculty and the Graduate School of Biomedical Sciences at UMDNJ. He is a Visiting Professor at Chulalongkorn University in Bangkok, Thailand and at Prince of Songklha University in Hat Yai, Thailand. Dr. Robson was named a Fulbright Senior Specialist for Thailand in 2005. Dr. Robson has won numerous awards including UMDNJ Master Educator 2001, School of Public Health Student Association Excellence in Teaching Award 2001 and 2006, and Foundation of UMDNJ Excellence Award for Teaching 2002. He was the recipient of the American Water Works Association - Research and Education Award in 2005 and the George Hammell Cook Distinguished Alumni Award, Rutgers University in 2005 and the Distinguished Alumni Award for the Graduate School New Brunswick in 2009. He was named to the ASPH/Pfizer Public Health Academy of Distinguished Teachers 2007. In 2009 he won the Pfizer Excellence in Teaching Award for Public Health and in 2010 he received the Foundation of UMDNJ Excellence Award for Research. In 2011 he was named the Mehlman Award recipient from the International Society of Exposure Assessment.