Principles of Organic Crop Production
(3.0 credits)

Normally Offered: Fall every year. By Dr. Heckman.

Pre-requisites and other registration restrictions:
All majors are welcome.

Format: One 160-minute lecture per week; class field trips

Description:
Course will cover cultural practices (crop rotations, cover crops, and pest management, etc.) and biological processes (composting, soil food web, plant and animal health, etc.) that form the basis for organic production of plant and animal products (fruit, nuts, vegetables, grain, forage, pasture, milk, meat, and eggs) and land stewardship. The course will provide an overview of organic agriculture history, philosophy, and sociology in addition to organic production practices and the USDA National Organic Program. Several course topics will be presented as Invited Guest Lectures.

Learning Goals:
• Be able to explain the role of soil-health in organic crop production
• Learn the basic cultural practices and biological processes critical for successful organic farming
• Be able to give examples of ways to manage weeds, insects and diseases in organic crop production

Measures of Assessment:
• Five quizzes
• Book Review
• Homework and writing assignments.

Course Website:
Sakai or eCompanion

Topics:
• Overview of Organic Agriculture Principles and Philosophy
  o Soil health as the basis for organic farming
  o Origin, history, and philosophy of organic agriculture
• History of science in relation to organic agriculture
• Recent trends in the organic market place
• Organic certification and the USDA-NOP

• Cultural Practices and Biological Processes
  a. Composting organic procedures
     o Soil food web
     o Nutrient cycles
     o Crop rotations
     o Cover Crops

• Organic Crop Production and Marketing
  o Organic production systems for field and forage crops
  o Vegetables (tomato, leafy greens, cruciferous crops, etc)
  o Fruit crops (blueberry, strawberry)
  o Vegetable farm field trip
  o Tree crops (fruit and nut)

• Rotational grazing and pasture management

• Pest Management for Organic Producers
  o Weed management SARE video
  o Disease management
  o Insect pest management
  o Directed reading and discussion of organic literature relating to pest management

• Organic Livestock Production and Marketing
  o Pastured dairy
  o Dairy cow, goat, milk, cheese
  o Vegetable CSA, Poultry, cattle, and hogs on pasture
  o Animal health practices

• Future Trends in Organic Agriculture
  o Traditional diets (raw milk, fermented foods, pasture fed meat, milk, eggs)
  o Grass based agriculture and health benefits
  o Building consumer-farmer relationships
  o Organic Materials Review Institute
  o Directed reading and discussion of organic farming trends

• Field Trips:
  o Hort-3 Composting
  o Cherry Grove Farms

**Required and Recommended Course materials:**

Organic Farming: The Ecological System. Charles Francis, Editor. American Society Agronomy, Crop Science Society America, Soil Science Society America, 677 South Segoe Road, Madison, WI 53711, USA. Agronomy Monograph 54. Madison, WI.

Organic Transition – An On-line Course from Rodale Institute

The course can be accessed from any location via the Internet: http://www.tritrainingcenter.org/course/

Additional handouts and on-line materials are required reading. Such material may appear on exams even if we do not specifically discuss it in class.

**Policies for Exams, Assignments, Attendance, and Grading**

Field Trips: Attendance on field trips is required. You are encouraged to take notes and photographs to be used to write field trip reports. A field trip to several organic farms will be scheduled for early October.

Course Attendance: Attendance at every class period is required. Missed class time will be reflected in final course grade.

Homework and writing assignments: All homework and writing assignments must be type written on 8.5 x 11 white papers. Written homework assignments are due at the start of the following week class period. Homework may not be turned in by email to instructor, no exceptions.

Course Policies and Procedures: Notify instructor if you have any special learning needs. In this course will you will be exposed to a wide range of topics, some of which may be controversial, relating to organic agriculture. Rational and intelligent discussions of differences of opinion are welcome. The course outline and syllabus may be modified if there are extenuating circumstances.

Academic Integrity: Any documented incident involving academic dishonesty on exams or papers will result in a failing grade for the course and possible dismissal from the university.

**Grading:**

Quizzes (5 quizzes, 10 points each) = 50 points
Online Rodale Transition Course = 10 points
Class attendance participation/discussion = 10 points
Homeworks are typically short questions or written summaries from directed readings, guest lectures, field trips etc. = cumulative of 10 points.
Book review/report (about 500 to 1000 words on selected book relating to organic agriculture) = 10 points. Book report due date is Nov 21, 2013, no exceptions.
Final Exam (cumulative) = 10 points

Total = 100 points
Final grades:

A = 90-100 pts  
B = 80-89 pts  
C = 70-79 pts  
D = 60-69 pts

Final Exam:

Write a fact sheet about how to successfully produce or grow the crop of your choice using organic farming methods. The organic crop you choose is open to many possibilities and may include any vegetable, fruit, grain, or forage crop. Organic animal products such as meat, milk, or eggs are also acceptable “crops” to select for this assignment. A fact sheet should discuss all essential aspects of organic crop production: Organic Farm Plan, Soils, Crop Varieties, (Animal Breeds) Planting Date, Seeding Rate, Plant Population, Crop Rotation, Plant Animal Integration, Soil Fertility, Pest Management, Harvesting, Marketing, etc. Write maximum of two pages. In this special case of the Final Exam, it may be turned in before the end of the official course exam period by emailing your fact sheet essay to heckman@aesop.rutgers.edu

Students are expected to attend all classes; if you expect to miss one or two classes, please use the University absence reporting website https://sims.rutgers.edu/ssra/ to indicate the date and reason for your absence. An email is automatically sent to me.

Please note: My policy for missed labs and missed exams is to have them take a make up within a one week.

Other Information:
"Rutgers, the State University of New Jersey abides by the Americans with Disabilities Act of 1990, the Americans with Disabilities Act Amendments (ADAA) of 2008, and Sections 504 and 508 which mandate reasonable accommodations be provided for qualified students with disabilities and accessibility of online information. If you have a disability and may require some type of instructional and/or examination accommodation, please contact me early in the semester so that I can provide or facilitate in providing accommodations you may need. If you have not already done so, you will need to register with the Office of Disability Services, the designated office on campus to provide services and administer exams with accommodations for students with disabilities. The Office of Disability Services is located in the Kreeger Learning Center, 151 College Ave, 732-932-2848. I look forward to talking with you soon to learn how I may be helpful in enhancing your academic success in this course."

This is from the Office of Disability Services (http://disabilityservices.rutgers.edu/faculty.html).