

## Agroecology

11:776:442 (3 credits)  
Spring Semester (yearly)

### CONTACT INFORMATION

Instructor: Dr. Mark Gregory Robson  
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### COURSE DESCRIPTION

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.

“What is Agroecology? The science of agroecology, which is defined as the application of ecological concepts and principles to the design and management of sustainable agroecosystems, provides a methodological framework to tackle this task. The central idea of agroecology is to develop agroecosystems 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, University of California Berkeley,

### COURSE WEBSITE, RESOURCES AND MATERIALS

- Course website: Sakai site for 776:442
- Required text:  
Buffett, Howard. 2013. 40 Chances: Finding Hope in a Hungry World. Simon and Schuster, 1<sup>st</sup> ed. ISBN 13:978-1451687866

### PREREQUISITES

None

### COURSE LEARNING GOALS

(Link to Plant Biology Undergraduate Program Goals: <http://plantbiology.rutgers.edu/undergrad/plantbiology/>)

By the end of this course, the student will be able to:

1. Recognize the contributions that plants and plant products make to human well-being (addresses programs goals 1 and 2, technical proficiency and context)
2. Critically examine the problems the world faces regarding food production, trade, and consumption (addresses program goals 1 and 2, technical proficiency and context)
3. Recognize and defend one's own values regarding food production, trade, and consumption (addresses program goal 3, communication)
4. Discuss and communicate the concept of sustainability as it relates to agriculture (addresses program goal 3, communication)

## ASSIGNMENTS/RESPONSIBILITIES & ASSESSMENT

**Grading:** Grades will be based on attendance, participation, one written assignment (term paper) and one group presentation.

Attendance	20%	Attendance is crucial to success in this course. Topics and readings will be discussed during lecture
Participation	30%	Discussion is an important part of this course. Readings provide the foundation for students to discuss their ideas and views during class
Presentations	30%	Students will divide up into teams and develop a class project
Critical paper	20%	Students are required to write a term paper about one aspect of agroecology; the paper should be 8 pages in length plus references, double-space 10-point type. The paper is due week 13 of class.

Grading scale: 90-100 = A; 80-89 = B; 70-79 = C; 60-69 = D

**Group project:** Students will divide into groups of three, select a commodity (e.g., coffee, wheat, bananas, etc.), and report on certain aspects including history, sustainability, pest management, market, transport, and pricing. Each group is responsible for a 15 to 20-minute PowerPoint presentation following by Q&A from the class.

**Critical paper:** Papers are 8 pages, double-spaced 10-point type. Students may choose from a list of topics or develop one on their own. These represent independent work and Turnitin will be used to assess text for plagiarism.

**Learning goals assessment:** Mastery of the principles of agroecology will be assessed during participation in class discussions (course learning goals 1 to 3). The group presentation and term paper will be used to assess student ability to synthesize and communication information (course learning goal 4). The percentage score on these assessments will determine the level of mastery: >90% outstanding; 80-89% good; 70-70% satisfactory; <69% unsatisfactory.

## PARTICIPATION GRADE AND ABSENCE POLICY

Attendance is mandatory. Courtesy demands that students unable to attend may contact the instructor via e-mail prior to the missed class or may use the University absence reporting website (<https://sims.rutgers.edu/ssra/>) to indicate the date and reason for the absence. An e-mail is automatically sent to the instructor.

## CLASS WEBSITE

Lectures, supporting documentation, and assignments will be posted to Sakai.

## LECTURES

Lectures are composed of 3-hour sessions during which topics will be introduced and discussed: the first half of class is lecture, the second half is student-facilitated discussion. Readings will be e-mailed prior to class; these serve as the foundation for class discussions, and it is expected that students will review these materials beforehand.

## COURSE SCHEDULE

Week	Topic, readings, and assignments
1	Introduction to course: Review of syllabus, course expectations, and group assignment Introduction to agroecology Calorie assignment Readings: 40 Chances: Introduction Sustainable Agriculture: An Introduction, and What is Sustainable Agriculture?
2	Introduction to agroecology (continued) Readings: 40 Chances: Chapters 1-5
3	CSA and food systems Biotech plants and animals DVD: <i>Bad Seed</i> Readings: 40 Chances: Chapters 6-10
4	Solar options in agriculture Combining solar photovoltaic panels and food crops for optimizing land use Readings: 40 Chances: Chapters 11-15
5	The Federal Food Policy DVD: King Corn Readings: 40 Chances: Chapters 16-20 Global Food Production Systems The Global Food System: A Research Agenda
6	Food Forward Program Sustainable farming and agricultural systems Readings: 40 Chances: Chapters 21-25
7	Guest lecture and class discussion
8	Climate changes issues in agriculture Readings: 40 Chances: Chapters 26-30
9	Spring recess
10	Your food's carbon foot print Readings: 40 Chances: Chapters 31-35
11	Vertical agriculture and new technologies Readings:

Week	Topic, readings, and assignments
	40 Chances: Chapters 36-40
12	Student presentations: Work session
13	Student presentations: Part one
14	Student presentations: Part two
	Critical papers due
	Wine tasting

## FINAL EXAM DATE AND TIME

There is no final exam for this course.

## ACCOMODATIONS FOR STUDENTS WITH DISABILITIES

Please follow the procedures outlined at <https://ods.rutgers.edu/students/registration-form>. Full policies and procedures are at <https://ods.rutgers.edu/>

## ACADEMIC INTEGRITY

The university's policy on Academic Integrity is available at <http://academicintegrity.rutgers.edu/>

The principles of academic integrity require that a student:

- Properly acknowledge and cite all use of the ideas, results, or words of others.
- Properly acknowledge all contributors to a given piece of work.
- Make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.
- Obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.
- Treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- Uphold the canons of the ethical or professional code of the profession for which he or she is preparing.

Adherence to these principles is necessary in order to ensure that:

- Everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments.
- All student work is fairly evaluated and no student has an inappropriate advantage over others.
- The academic and ethical development of all students is fostered.
- The reputation of the University for integrity in its teaching, research, and scholarship is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld.

## STUDENT WELLNESS SERVICES

**Just In Case Web App** <http://codu.co/cee05e>

Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

**Counseling, ADAP & Psychiatric Services (CAPS)**

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901 / [www.rhscaps.rutgers.edu/](http://www.rhscaps.rutgers.edu/)

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

**Violence Prevention & Victim Assistance (VPVA)**

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / [www.vpva.rutgers.edu/](http://www.vpva.rutgers.edu/)

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

**Disability Services**

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.

**Scarlet Listeners**

(732) 247-5555 / <http://www.scarletlisteners.com/>

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.