

## **Global Agroecosystems**

**ALS 5155 (This course is also taught at the undergraduate level as ALS 4154)**

### **INSTRUCTORS:**

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### **CONTACT:**

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**OFFICE HOURS: By appointment**

**COURSE OFFERED:** Every Fall Semester, resident and distance education

**TIMES:** MWF Period 4 (10:40 am – 11:30 am); weekly lectures can be viewed from the Canvas course management site; weekly paper discussions via Canvas.

**CREDIT HOURS:** 3

### **PREREQUISITES**

Introduction to Soils (SWS 3022), Soils for Environmental Professionals (SWS 5050), Applied Field Crop Production (AGR 4214C), and Agricultural Ecology (ALS 3153), or equivalents, or approval by the instructors.

### **COURSE DESCRIPTION:**

This course focuses on the principles of agroecology and presentation of topics that integrate ecological with agricultural principles to optimize resource conservation, productivity, societal benefit, and profitability.

### **COURSE OVERVIEW:**

There is a need for students trained broadly in agriculture, including agriculture's role in ecology as farming systems become more complex. This context is found in the "triple bottom line" of economics, environment, and society. This course will emphasize greater understanding of this triple bottom line in agricultural production in an ecosystem context, often termed agroecology. It will focus on the global trends of increasing population and land-use pressure; diminishing soil, water, nutrient, and energy resources; concern over

the negative impacts of agricultural production on the environment; and increasing awareness of the potential ecosystem service benefits from agriculture.

### **COURSE OBJECTIVES:**

The overall objectives of the course are to provide students with: 1) understanding of the complex interactions that occur in agroecosystems; and 2) the ability to apply this knowledge to the design and management of sustainable agricultural production systems across the world.

### **STUDENT LEARNING OBJECTIVES:**

Following this course, students are expected to be able to:

1. Describe and understand global agricultural production systems and their role in facing the challenge of increasing global population.
2. Evaluate and discuss agricultural production issues from environmental, economic, and societal perspectives.
3. Analyze research literature dealing with the sustainability of agriculture.
4. Synthesize and apply the knowledge gained in this course to assess emerging agricultural production systems.
5. Use principles learned in this course to synthesize and evaluate a relevant and timely global issue in agroecology and effectively communicate in video format.

### **CLASS FORMAT**

Three 50-minute periods per week. Delivery will be synchronous and asynchronous through videotaped classroom lectures. Recorded lectures will be placed in the course Canvas site. There will be a weekly discussion session managed in Canvas.

### **TEXTBOOK**

None required. Readings will be assigned for each week of the course. The following textbooks are useful references for the course:

Altieri, M.A. 1995. *Agroecology: The science of sustainable agriculture*, second edition. Westview Press, Boulder Colorado.

Bohlen, P.J., and G. House. 2010. *Sustainable agroecosystem management: Integrating ecology, economics, and society*. CRC Press, Boca Raton, FL.

Jackson, L.E. 1997. *Ecology in agriculture*. Academic Press, San Diego, CA.

Scherr, S.J., and J.A. McNeely (eds.). 2007. *Farming with Nature: The Science and Practice of Ecoagriculture*. Island Press, Washington, DC.

Sinclair, T.R., and A. Weiss. 2010. *Principles of Ecology in Plant Production*, 2<sup>nd</sup> edition. CAB International. 186 pp.

Sinclair, T.R. and C.J. Sinclair. 2010. *Bread, Beer and the Seeds of Change: Agriculture's Imprint on World History*. CAB International. 288 pp.

Vandermeer, J.H. 2010. *The ecology of agroecosystems*. Jones & Bartlett Learning, Sudbury, MA.

Wojtkowski, P.A. 2006. *Introduction to agroecology: Principles and practices*. Psychology Press, Binghamton, NY.

## ASSIGNED READINGS

To be posted in Canvas or emailed each week.

## SPECIAL SOFTWARE

None required

## E-LEARNING

**E-learning Canvas.** The entire course will be managed through e-learning using Canvas. All materials and content will be available fully on-line delivered in **E-Learning Canvas**, the centrally-supported course management system at UF. Canvas is the on-line source for the majority of your learning resources and assignments in this course. For a link to the tutorial regarding E-Learning Canvas functionality, go to the class home page on canvas. Students enrolled in the course should login to Canvas on the first day of the course at: <http://lss.at.ufl.edu>. You will use your Gatorlink name and password to login to Canvas. All PowerPoint presentations that support the video lectures will be posted within the "Pages" section of Canvas, as well as readings on the lecture topics.

Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

## EVALUATION OF STUDENTS

The class is graded on the point scale, totaling **125 points**.

- 3 exams. On exams, graduate students will answer in-depth discussion questions beyond those expected of the undergraduate students. All students will complete exams online through Canvas. **25 points each = 75 points total**
- Participation in class discussions. Class participation will consist of weekly discussions of assigned scientific readings on advanced topics. Graduate students will be expected to: 1) post a question for the class to discuss for all assigned readings during the semester and post two original comments/replies to other graduate student questions (one question and 2 reply posts per week – see class schedule for assigned readings; 15 points); and 2) provide at least one original comment to graduate student projects (see below) during the last part of the semester (15 points). **30 points total**
- Completion of a voice-over powerpoint involving identification of a current issue in agroecology, review of the pertinent research, description of innovative strategies for its mitigation, and identification of gaps in the science. Students will post their powerpoint using VoiceThread for comment from other students in the class. **20 points total**

**Make-up exams will be approved only due to illness or extreme family needs, or important excused activities required by another class. Make-up exams must be approved prior to the regularly scheduled exam, and must be made-up within two class periods.** If you are unable to take the exam due to illness, contact the instructor prior to the exam to confirm your absence.

**GRADING :**

We will use the following grading for the course:

- A 94 – 100%
- A- 90 – 93%
- B+ 87 – 89%
- B 83 – 86%
- B- 80 – 82%
- C+ 77 – 79%
- C 73 – 76%
- C- 70 – 72%
- D+ 67 – 69%
- D 63 – 66%
- D- 60 – 62%
- E < 60%

**Grades and Grade Points Effective May 11, 2009 - Summer A**

<http://registrar.ufl.edu/catalog/policies/regulationgrades.html>

<b>Letter Grade</b>	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	WF	I	NG	S-U
<b>Grade Points</b>	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	.67	0	0	0	0	0

For information on current UF policies for assigning grade points, see

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

**CLASS PARTICIPATION AND ATTENDANCE – READ CAREFULLY**

We expect all resident students (as part of the responsibilities of registration in the resident section of the class) to attend ALL classes, unless notification is given BEFORE the missed class period, or afterwards in the case of a medical emergency. For resident students, the lack of attendance and/or notification of absences will be reflected by **deduction** of participation points. We expect ALL students (resident and DE) will participate in the class by actively engaging in weekly discussions and posting comments on grad student projects.

**STUDENT RESPONSIBILITIES AND EXPECTATIONS:**

We expect students to attend (resident) or view (DE) all lectures.

It will be expected that students will take leadership in discussions providing guidance and insight to other students.

Readings will be assigned that will supplement class lecture and discussion material. Students are expected to read the materials. Discussions and some exam questions will come from the reading material. It will be expected that graduate students will take leadership in discussions providing guidance and insight to other students. We expect a higher level of synthesis and evaluation of all class materials on exams and discussion

beyond just description. This will involve the application of principles within the literature to local/national/global issues.

Additional specific expectations are outlined in the Evaluation of Students section of the syllabus.

**TOPICAL OUTLINE: see posted outline.**

**CLASSROOM ETIQUETTE AND DEMEANOR:**

Students are expected to arrive for class on time since lectures will begin promptly at the beginning of the period. Cell phones must be muted during class.

**ABSENCES AND MAKE-UP WORK**

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

**Academic Honesty, Software Use, Campus Helping Resources, Services for Students with Disabilities**

**ACADEMIC HONESTY**

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>.

**SOFTWARE USE:**

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

### **CAMPUS HELPING RESOURCES:**

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)*
  - Counseling Services
  - Groups and Workshops
  - Outreach and Consultation
  - Self-Help Library
  - Training Programs
  - Community Provider Database
- *Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)*

### **SERVICES FOR STUDENTS WITH DISABILITIES:**

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)

### **STUDENT COMPLAINTS ON DISTANCE LEARNING**

Each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level. See <http://distance.ufl.edu/student-complaints> for more details.