

# AGR 4212: Alternative Cropping Systems

Spring 2017; 3 Credits

WEB

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**Office Hrs:** T 12:30-2:30, W 10-12, (will be on  
gchat or skype), by appointment  
3121 McCarty Hall

**Course Description:** Examines alternative cropping systems, focusing on issues of sustainability, against a backdrop of trends occurring in *conventional* agriculture.

## Course Format:

The course is designed to be completely web-based, with field trips to view application of course material in real-world settings. The content will all be available on Canvas and will include lectures, readings, discussions, virtual field trips, projects, case studies, websites, and videos. When changes must be made to the syllabus, including the course schedule and assignments, students will be notified in class and via Canvas or email. There is no text book required.

## General Course Objectives:

- 1) To survey the manageable elements that define alternative cropping systems, with an emphasis on innovative, new, and sustainable systems
- 2) To consider the abiotic, biotic, and social factors that influence the nature of cropping systems
- 3) To consider the abiotic, biotic, and social elements that are influenced by cropping systems
- 4) To apply the principles of sustainable management to agriculture to assess the functioning of cropping systems
- 5) To effectively communicate on these topics to crop producers and related audiences

## Course Module Schedule\*

\*instructor reserves the right to modify module topics and order to accommodate course progress, notice will be given. Modules will be posted weekly with a few exceptions for modules that span more than one week. Some modules will include web meetings or live discussions (to be scheduled) and the time will be adjusted accordingly.

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|---|--|
| 1. Course Introduction                              | 9. Crop Water Use and Water Retention by Soil  |
| 2. Purpose, History, Intensification of Agriculture | 10. Soil N & C Contributors                    |
| 3. Impacts of Agriculture                           | 11. Nutrient Cycling                           |
| 4. Ecosystem Services and agroecosystems            | 12. Biodiversity and Biological Competition    |
| 5. Applications of Agriculture Ecosystem Services   | 13. Productivity and Environmental Stewardship |
| 6. Components of "Alternative" Cropping Systems     | 14. Social Impacts in Agriculture Systems      |
| 7. Crop Photosynthesis and Metabolism               | 15. Biofuel Cropping Systems                   |
| 8. Crop Growth and Development                      | 16. Non-Field-Based Cropping Systems           |

**Field Trips and Site Visits:** The material in this course is very applied, and there is no substitute for seeing concepts and theories in action. Two to three trips to crop producers will be scheduled based on dates and locations established by class vote and interest, season, and producer availability. Students will be required to complete at least one field trip or site visit in person, and two virtual site visits. Because this course is web-based, if you are unable to join the class for a live trip I will upload videos of trips and site visits to Canvas and will assist students with finding local crop producers to visit on their own, with me, or in small groups. Concepts illustrated in these visits will be related to course content and you will have the opportunity to describe what you observed as a general overview or a topic-based writeup of the sites as an assignment submission. Details will be on Canvas.

**Communication:** Effective communication on everyone's part is important to success in this course. Please check your ufl and/or Canvas email regularly to catch any announcements or changes. It is especially helpful when you communicate with me regarding issues with course content or access, special needs or situations of which I should be aware, etc. Emails to my ufl email or via canvas are the best way to reach me, but I encourage you to call my office number if you like (it usually forwards to my cell if I'm away from my desk). Polls will be sent out occasionally so that I can check in to see how the class is going. Please email, call, set up a web chat, stop by my office, or send an owl to say hello and help us both put a person behind our online presence!

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## Course Grading Scale:

A = 100-94%

A- = 93-90

B+ = 89-87

B = 86-83

B- = 83-80

C+ = 79-77

C = 76-73

C- = 72-70

D+ = 69-67

D = 66-63

D- = 63-60

E < 60

Final grade points will be assigned according to current UF policies:

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

## Grade Distribution and Policies:

All graded submissions will be posted to Canvas with due dates and descriptions. Every effort will be made to grade assignments within 48 hours of submission.

**Late policy:** *Every due date has a 48 hour grace period submission window.* You are allowed to submit assignments up to 48 hours after the due date without penalty or explanation. Submissions received 48 hours and 1 minute after the deadline and later will not be accepted except in *extremely* extenuating circumstances.

## Grade category distribution:

- 1) Knowledge Checks: 20%
- 2) Assignments, Discussions: 20%
- 3) Project 1: Crop system profiles: 30%
- 4) Project 2: Design a cropping system: 30%

### 1) Knowledge Checks (20%)

Short knowledge checks will be posted to Canvas periodically throughout the semester. These will be in various formats: quizzes, polls, webquests, etc. The purpose is for me to assess your knowledge of the reading material and concepts covered in the modules so that I can modify course content and so that you can track progress through course material to ensure success on the projects and other assignments.

### 2) Assignments, Discussions (20%)

Each module will have assignments in various forms: scavenger hunts, discussion posts, videos, article summaries, and more. They will all be posted to Canvas and most due dates will fall on Fridays.

### 3) Crop System Profiles (30%)

For this project you will provide a comparative analysis of at least two different cropping systems. You will use course content and outside research to structurally and functionally describe and compare the cropping systems, including considerations of the social, abiotic, biotic, and management factors that influence them differently. Cover the productivity of each cropping system and discuss the sustainability of the systems, including environmental impacts and an assessment of the systems' ability to support the regions' needs (for domestic and/or export value) currently and in the future. Use peer-reviewed and other valid resources, including case studies. The profiles should preferably take the form of a deliverable with mass appeal or a well-defined audience. Policy papers, scholarly presentations and posters, websites, videos, extension publications, lesson plans, and other formats are all encouraged. Group projects welcome. Every individual or group will submit topics and proposals ahead of time for review-most of the time they are fine, but occasionally proposals are too much or not quite enough to cover. Additional information and a rubric will be posted to Canvas.

### 4) Design a Custom Cropping System (30%)

Using the concepts you from class and found via independent research, you will design a cropping system. This will involve selecting appropriate plant material and management practices that complement each other in space and time, resulting in theoretically improved cropping efficiency and sustainability. Recalling that the formula for efficiency is outputs over inputs, your cropping system can theoretically enhance product yield and/or quality, improve environmental or social impacts, or reduce inputs. Improved cropping efficiency does not necessarily improve sustainability, so you will separately theoretically justify how sustainability will be improved by the new cropping system. You will submit the design in the format of your choosing-it may be narrative, a plan or diagram, website, presentation, virtual tour, etc. These designs are meant to be somewhat conceptual, however they must be specific

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enough to allow a future farmer to learn and follow the design. Grades will be based on concept application, use of course content and outside information, and coverage of points mentioned above, NOT artistic ability or web design skills, but creativity is very welcome! This assignment can be done alone or in groups. We'll schedule a discussion or chat to cover topic proposals well ahead of the deadline, and additional information and a rubric will be posted to Canvas.

### **Course Evaluation Process**

Please take the time to evaluate this course and me as your instructor! I use your feedback to improve the course each semester, and the college uses it to determine all sorts of things. I'll send out a mid-semester evaluation to adjust the course as necessary, but the final end-of-semester evaluation from UF online is very important.

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

***Your instructor reserves the right to make changes to the course as needed and will notify you of any changes in as timely a manner as possible. Notification will be through Canvas and your ufl email.***

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

#### **Academic Honesty**

In 1995 the UF student body enacted an [honor code](#) and voluntarily committed itself to the highest standards of honesty and integrity. When students enroll at the university, they commit themselves to the standard drafted and enacted by students.

**The Honor 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.**

On all work submitted for credit by students at the university, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**

Students should report any condition that facilitates dishonesty to the instructor, department chair, college dean, Student Honor Council, or Student Conduct and Conflict Resolution in the Dean of Students Office. (Source: 2011-2012 Undergraduate Catalog)

It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor.

This policy will be vigorously upheld at all times in this course.

#### **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

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available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance. [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)

*University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,*

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. 0001 Reid Hall, 352-392-8565,

[www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)