

Agriculture and Environmental Quality

ALS 3133 – Spring 2016

Instructor

Susan Curry
scurry@ufl.edu

352-294-3147
2163 McCarty Hall A

Office Hours: MTW 10-11 am or by appt.

Prerequisites: None

Teaching Assistant

TBA

Office Hours: TBD

Course Website is through E-Learning via **Canvas:** <http://lss.at.ufl.edu>

Overview:

Analysis of the effects of agriculture on environmental quality with emphasis on agricultural wastes and practices, the potential for using agricultural systems for disposal of other wastes and the effects of pollution on the agricultural environment. Topics covered include: Soil characterization and erosion/leaching, non-point source pollution, best management practices, land application of biosolids and organic wastes, bioenergy, pesticides, and wetlands.

Course Description and Statement of General Education Purpose:

Understanding agriculture's role in the environment and in our lives is integral to the overall educational experience. This course is intended for all majors to acquaint students to agricultural practices and their effect on environmental quality, and to demonstrate how agricultural scientists are attempting to minimize agricultural pollution and sustain food production adequate for the world's population. This course should be of significant value to those students who will be involved in the management of agricultural production and processing industries as well as to those with a special interest in agricultural pollution control and plan further study in this area.

This course introduces students to the science behind agriculture emphasizing the chemical and biological significance of soils and microorganisms. Agriculture has had a large impact on changing landscapes and water resources in both quantity and quality. Course topics include point and nonpoint source pollution, the Clean Water Act, wetlands, bioenergy, food waste and pesticides. Students will examine the nitrogen, phosphorus and carbon cycles, and determine application rates for nutrient management. Agriculture is also being called upon to receive wastes produced by modern society. The students will study the wastewater treatment process and the use of biosolids and reclaimed water in agriculture. Students will scrutinize the benefits and the challenges that renewable energy (biomass) poses for agriculture and our environment.

Written homework assignments and discussions will provide a basis for critical evaluation of historical and current agricultural issues. Students will gain an understanding of the importance of well managed agriculture and provide a foundation upon which they can formulate and articulate views relative to agricultural issues and the environmental pressures which continue to increase.

Objectives:

1. Promote student knowledge of the role of agriculture in environmental processes both historically and as part of the solution to current environmental issues.
2. Provide students with a scientific basis for understanding the movement of water and nutrients through the environment and evaluating water availability and water quality issues.
3. Provide a fundamental understanding of best management practices and the role that they play in minimizing water, nutrient and pesticide usage.
4. Provide a basic understanding of major nutrient cycling and the role of organic matter and microorganisms in these cycles.

Student Learning Objectives:

Predict the movement of nutrients and pesticides based on soil characteristics
Solve for nutrient application rates given specific cropping/source scenarios
Sketch the nitrogen and phosphorus cycles and identify transformations in each
Select best management practices suitable for Florida agriculture
Assess the environmental benefits and problems associated with biofuels
Describe the components of a basic nutrient management plan
Compare aerobic and anaerobic composting techniques
Critique the use of biosolids and reclaimed water in agricultural and residential settings
Discuss current issues with the production and disposal of animal wastes and food wastes

Basic Course Requirements

1. Exams consist of short answer, definitions, multiple choice and true/false questions. Study guides and review sessions will be provided prior to each exam.
2. Homework will address current and historic topics in agriculture as it relates to the environment as well as basic assignments related to class lectures.
3. Quizzes are designed as a study tool and can be taken multiple times. Answers to quizzes are provided after you have taken the allotted number of quizzes or after the quiz closes.
4. Course participation is determined by completion of lecture questions handouts, Canvas discussions and questions asked/answered during lecture. Discussion topics will be available for each module. Students are expected to contribute to the discussions on a regular basis.

Textbook: No Textbook: Readings are provided through E-Learning to address topical issues of agriculture.

Grading:

Exams	40%
Course participation/attendance	15%
Homework/Assignments	35%
Quizzes	10%
TOTAL	100%

Grades will be based on your best 3 of 4 exam grades. If you miss an exam, that exam will be considered your drop. No makeup exams will be given without prior consent. If you will be missing class, please let me know as soon as possible.

ON-Campus section - attendance is required to fulfill 5% of the 15% Course participation. Lecture questions will be provided prior to the commencement of each lecture. These questions will be answered during the course of the lecture, therefore, attendance is required. Students may miss 3 lecture question assignments without penalty.

Web sections – Chat session attendance will fulfill part of your attendance grade. Chat sessions will be held at 6:00 pm on Monday nights every two weeks during the semester. Lecture questions for each session will be due Tuesday night (Online students only).

Discussion topics will be provided in each module. ALL students are required to submit a response to these questions as well as respond to at least 2 other student responses.

Homework/Assignments

Homework submissions: Homework assignments are due in class or submitted through the Canvas site. E-mailed homework will only be accepted if submitted **prior** to the due date. Late work will lose 25% of total points each day and NOT ACCEPTED after 4 **calendar** days. Students participating in UF sanctioned events or with excused absences will receive 3 calendar days to submit missed work. No additional time will be given for discussions which are available for at least 7 days. Be sure to submit your discussions BEFORE leaving for your event.

The following grading scale will be used:

A	100-92.0 %	C	76.9-72.0	D+	69.9-67.0
A-	91.9-90.0	C-	71.9-70.0	D	66.9-62.0
B+	89.9-87.0	B-	81.9-80.0	D-	61.9-60.0
B	86.9-82.0	C+	79.9-77.0	E	<60

Online Course Evaluation Process:

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>.

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.

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/process/student-conduct-honor-code>.

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.

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/

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/*
 - Counseling Services
 - Groups and Workshops
 - Outreach and Consultation
 - Self-Help Library
 - Wellness Coaching
- *Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/*

Topic Schedule – Deadlines and Due Dates (these may be adjusted as the semester progresses)

ALL ASSIGNMENTS IN ALS 3133 ARE DUE AT 11:59 PM (EST) ON THE DUE DATE

COURSE MATERIAL	ACTION	DUE DATE	TIME
INTRODUCTORY Syllabus Quiz	Begin	Monday, August 24, 2015	9:00 A.M.
Syllabus FAQ Quiz (in Canvas)	<i>Due</i>	Monday, August 31, 2015	11:59 PM
Module 1 - Agriculture and the Soils of Florida	Begin	Monday, August 24, 2015	9:00 A.M.
<i>View Module 1 Lectures:</i>			
<i>Course Overview and Soils Review</i>			
<i>View: The Other Inconvenient Truth</i>			
Assignment 1: The Other Inconvenient Truth	<i>Due</i>	Thursday, September 3, 2015	11:59 PM
Discussion Activity Module #1 - Your Response	<i>Due</i>	Sunday, August 30, 2015	11:59 PM
<i>Discussion Activity Module #1 - Respond to at least 2 other students</i>	<i>Due</i>	Sunday, September 6, 2015	11:59 PM
<i>Complete Quiz 1</i>	<i>Due</i>	Monday, September 7, 2015	11:59 PM
Module 2 - Nonpoint Source Pollution and BMPs	Begin	Monday, September 7, 2015	9:00 A.M.
<i>View Module 2 Lectures:</i>			
<i>Nonpoint Source Pollution & Best Management Practices</i>			
<i>View: Water's Journey: The Hidden Rivers of Florida</i>			
Assignment 2-1	<i>Due</i>	Thursday, September 17, 2015	11:59 PM
Discussion Activity Module #2 - Your Response	<i>Due</i>	Sunday, September 13, 2015	11:59 PM
<i>Discussion Activity Module #2 - Respond to at least 2 other students</i>	<i>Due</i>	Sunday, September 20, 2015	11:59 PM
<i>Complete Quiz 2</i>	<i>Due</i>	Monday, September 21, 2015	11:59 PM
Test 1 - 9/30/2015			
Module 3 - Nutrient Management - N, P, & C Cycles	Begin	Monday, September 21, 2015	9:00 A.M.
<i>View Module 3 Lectures:</i>			
<i>Nutrient Management, Nitrogen Cycle, Phosphorus Cycle and Carbon Cycle</i>			
Assignment 3-1: Nitrogen and Phosphorus Cycles	<i>Due</i>	Thursday, October 1, 2015	11:59 PM
Discussion Activity Module #3 - Your Response	<i>Due</i>	Sunday, September 27, 2015	11:59 PM
<i>Discussion Activity Module #3 - Respond to at least 2 other students</i>	<i>Due</i>	Sunday, October 4, 2015	11:59 PM
<i>Complete Quiz 3</i>	<i>Due</i>	Monday, October 5, 2015	11:59 PM

COURSE MATERIAL	ACTION		TIME
Module 4 - Organic Wastes, Composting & Land App.	Begin	Monday, October 5, 2015	9:00 A.M.
<i>View Module 4 Lectures:</i>			
<i>Organic Wastes, Composting, Biosolids and Land Application</i>			
Assignment 4-1:	<i>Due</i>	Thursday, October 15, 2015	11:59 PM
Discussion Activity Module #4 - Your Response	<i>Due</i>	Sunday, October 11, 2015	11:59 PM
<i>Discussion Activity Module #4 - Respond to at least 2 other students</i>	<i>Due</i>	Sunday, October 18, 2015	11:59 PM
Assignment 4-2: Land Application Worksheet	<i>Due</i>	Thursday, October 22, 2015	11:59 PM
Complete Quiz 4	<i>Due</i>	Monday, October 19, 2015	11:59 PM
Test 2 - 10/28/2015			
Module 5 - Agriculture and Water	Begin	Monday, October 19, 2015	9:00 A.M.
<i>View Module 5 Lectures:</i>			
<i>Reclaimed Water and Wetlands</i>			
Assignment 5: Constructed Wetland Assignment	<i>Due</i>	Thursday, October 29, 2015	11:59 PM
Discussion Activity Module #5 - Your Response	<i>Due</i>	Sunday, October 25, 2015	11:59 PM
<i>Discussion Activity Module #5 - Respond to at least 2 other students</i>	<i>Due</i>	Sunday, November 1, 2015	11:59 PM
Complete Quiz 5	<i>Due</i>	Monday, November 2, 2015	11:59 PM
Module 6 - Integrated Pest Management	Begin	Monday, November 2, 2015	9:00 A.M.
<i>View Module 6 Lectures:</i>			
<i>Integrated Pest Management</i>			
Assignment 6: Pesticide Application Worksheet	<i>Due</i>	Thursday, November 12, 2015	11:59 PM
Discussion Activity Module #6 - Your Response	<i>Due</i>	Sunday, November 8, 2015	11:59 PM
<i>Discussion Activity Module #6 - Respond to at least 2 other students</i>	<i>Due</i>	Sunday, November 15, 2015	11:59 PM
Complete Quiz 6	<i>Due</i>	Monday, November 16, 2015	11:59 PM
Module 7 - Food Processing and Bioenergy	Begin	Monday, November 16, 2015	9:00 A.M.
<i>View Module 7 Lectures:</i>			
<i>Food Processing, Bioenergy</i>			
Assignment 7: Bioenergy Report	<i>Due</i>	Monday, November 30, 2015	11:59 PM
Discussion Activity Module #7 - Your Response	<i>Due</i>	Sunday, November 22, 2015	11:59 PM
<i>Discussion Activity Module #7 - Respond to at least 2 other students</i>	<i>Due</i>	Sunday, November 29, 2015	11:59 PM
Complete Quiz 7	<i>Due</i>	Monday, November 30, 2015	11:59 PM
Test 3 - 12/4/2015			
Test 4 - 12/17/2015	Due	Thursday, December 17, 2015	

Outline of Topics: Agriculture and Environmental Quality (subject to change)

<u>Lecture #</u>	<u>Topic</u>
1	Introduction - Agriculture in Florida
2	Agriculture in Florida – The Hidden Rivers of Florida
3	Nonpoint Source Pollution
4	Nonpoint Source Pollution/Watersheds
5	The Other Inconvenient Truth Video
	Holiday – Labor Day
6	Introduction to Soils
7	Soils- Organic
8	Erosion/Leaching - Best Management Practices
9	BMP/Nutrient Management
10	Nutrient Management/Review
11	Exam 1
12	Organic Wastes
13	Animal Wastes
14	Waste management systems
15	Carbon Cycle - biochar
16	Nitrogen & Phosphorus Cycles
17	Nitrogen & Phosphorus Cycles
18	Municipal Biosolids
19	WRF Tour
20	WRF Tour
21	Municipal Biosolids
22	Reclaimed Water
23	Reclaimed Water/Review
24	Exam 2
25	Wetland Ecosystems/Mississippi River
26	Field Trip - Campus (SEEP)
27	Wetlands/Pesticides
28	Integrated Pest Management
29	Integrated Pest Management
30	Processing/Food Wastes Composting
31	Composting/ AD
32	Bioenergy
33	Bioenergy from Waste
34	BioEnergy Tour
	Holidays – Homecoming and Veteran’s
35	Review
36	Exam 3
37	Land Application
38	Land Application
39	Land Application
	Holiday - Thanksgiving
Last Week	Wrap-up/Review and Exam 4