

HOS 4283C
Advanced Organic and Sustainable Crop Production
Spring 2018 (3 credits)

INSTRUCTOR: Dr. Xin Zhao
Associate Professor
1235 Fifield Hall (first floor, west side of building)
(352) 273-4773
Email: zxin@ufl.edu

Teaching Assistant: Tian Gong (tiangong@ufl.edu)

CLASS MEETING TIMES AND LOCATION:

Lectures: MW 10:40-11:30 am, 2316 Fifield

Labs: F 10:40 am-1:40 pm, 2316 Fifield and the Horticultural Sciences Vegetable Teaching Garden

OFFICE HOURS: Monday 1:00-2:00 pm. Students unable to meet me at this time need to request an appointment, preferably by email.

CATALOG STATEMENT: “An intensive examination of the methods and techniques necessary for organic and sustainable production and marketing of horticultural products.”

OBJECTIVES: The purpose and intent of HOS 4283C is to further develop the concepts learned in HOS 3281C, acquaint students with the methods of sustainable and organic vegetable production, and critically evaluate relevant agricultural issues that affect the industry, the environment, and the society.

Primary Learning Outcomes

Upon successful completion of this course, students will be able to:

- Apply principles and practices of sustainable and organic production to commercial farm situations for soil and water management, disease, pest, and weed control, and post-harvest handling.
- Synthesize and assess scientific information from peer-reviewed literature to develop recommendations on agricultural techniques and ecological practices for sustainable and organic farming systems.
- Evaluate critically the advantages and disadvantages of various production systems.
- Develop a farm plan for organic and sustainable crop production that addresses environmental, economic, and social sustainability.
- Assess the growth of organic food market at both local and national levels.
- Demonstrate an in-depth science-based understanding and long-term vision of sustainable food systems.
- Improve communication and team working skills through class presentations and collaborations with peers in class projects and field activities.

FORMAT: Lecture/discussion, critical thinking activity, vegetable production in the field laboratory, field trip, class project.

TEXT: There are no required textbooks for this course. Book chapters, journal articles, websites, videos, and other materials will be collectively used. **E-learning** (<http://elearning.ufl.edu/>) is used in

this course to post lectures, assignments, reading materials, useful websites and resources, video clips, study guides, and grades.

ATTENDANCE AND CLASS PARTICIPATION: Students are required to be present for every class. Regular attendance is necessary in order to gain a complete understanding of course materials and practice your critical thinking skills. To establish an excused absence, please notify the course instructor as soon as possible if you will have to miss a class or field trip due to an emergency. Class attendance is counted in the final grade. If you are absent, it is your responsibility to obtain and learn the materials you missed. **Attendance will be rewarded as: 100 points for 0-1 unexcused absence. When 2 or more absences occur, 25 points will be deducted for each absence.**

ASSIGNMENTS: ALL the assignments should be submitted electronically to **E-learning**. They are expected to be in neat, legible format with grammar, punctuation, and spelling errors at a very minimum. Without any documented emergency situation, anything submitted after the deadline will **NOT** be acceptable and thus receive a grade of zero.

STUDY EXPECTATIONS: It is usually expected that students will spend approximately 2 hours of study time outside of class for every one hour in class. Since this is a **THREE (3)** credit course, you should expect to study an average of **SIX (6)** hours outside of class each week. Some students may need more outside study time and some less.

STUDENT EXPECTATIONS: Students are expected to be active, consistent, and respectful learners.

Active:

- Ask questions and participate in class discussion
- Review class materials outside of the classroom
- Reflect critical thinking in assignments
- If you miss a class, it is **YOUR RESPONSIBILITY** to obtain the material you missed

Consistent:

- Attend class
- Complete assignments by the due date
- Review class materials and readings regularly

Respectful:

- Cell phones should be turned off or put on vibrate mode and should not be answered in the classroom. Non-emergency, in-class text messaging is not acceptable.
- No back row chatter. Classroom participation is encouraged, but private conversations between students will not be tolerated
- Be on time. Tardiness will not be tolerated; if you must leave class early, notify the instructor ahead of time and sit near the exit

OTHER RESOURCES STUDENTS WILL NEED: 1) Students will need a three-ring notebook to keep notes, handouts, quizzes and other course materials, 2) notebook for lab journal, 3) ready access to an Internet-ready computer, 4) appropriate clothes for working outside when applicable (closed-toe shoes, hat/sunglasses/sunscreen).

ASSIGNMENTS AND GRADING: Grades will be based upon the following:

Class attendance.

Quizzes: There are 10 quizzes throughout the semester. Quizzes will be on lecture contents and assigned readings.

Lab journal (electronic): Each student must record weekly lab activities and observations of crop development in their journal. The journal may include lab instruction notes, reports, photographs, drawings, etc.

Writing assignments: There will be two literature review based writing assignments.

Market survey project: Organic food market survey and report.

Dream Farm project: The class as a whole will establish a field-to-market dream farm in the teaching garden.

Individual project: Each student will design and conduct a research or demonstration experiment. A poster presentation will be made by each student at the end of the semester to present the research findings.

Activity	Points possible
Attendance	100
Quizzes	400
Lab journal	400
Writing assignments	100
Dream Farm project	200
Market survey project	100
Individual project	200
Total	1500

- 93-100 = A
- 90-92 = A-
- 87-89 = B+
- 83-86 = B
- 80-82 = B-
- 77-79 = C+
- 73-76 = C
- 70-72 = C-
- 67-69 = D+
- 63-66 = D
- 60-62 = D-
- < 60 = E

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Graduate students are required to complete additional assignments which will be announced during the semester.

CLASS ATTENDANCE: For practical purposes, **attendance is required**. Students with extenuating circumstances may be granted excused absences with permission from the instructor. Excused absences, negotiated on a case-by-case basis, may permit the student to make up a quiz or turn in an assignment late. Students who are not granted an excused absence will receive a zero for the day, including any quizzes or assignments conducted during class time. **Students are expected to be in class on time.**

LATE WORK: Late work will not be accepted and therefore a grade of zero will be received by the student.

LECTURE FORMAT:

1. Invite announcements relating to student club activities and any other departmental, college or campus activities related to agriculture and the content of this course.
2. Invite students to share popular press clippings of current events related to organic and sustainable agriculture.
3. Briefly review previous material.
4. Present the current material.
5. In class questions and discussions are encouraged and expected.

LABORATORY GUIDELINES:

We will meet in 2316 Fifield or in the field across from Fifield Hall every Friday and will begin promptly at 10:40 am. Try to be in class at least 5 minutes before it begins. Please monitor weather conditions and dress appropriately. Class will not be cancelled for inclement weather, but will be relocated to the greenhouse or classroom at the discretion of the instructor.

For your safety, the health of the plants, and respect for your peers, please:

- No smoking or chewing tobacco in the field.
- No cell phone calls unless there is an emergency.
- Wear closed-toe shoes that you don't mind getting muddy.
- Bring water or some other beverage to the field lab – it gets hot in the field!
- Bring sunglasses, hat, and sunscreen as needed.
- There are no restroom facilities in the field lab, so please take your breaks before class begins.

Students will be assigned to teams, and will work with that team throughout the semester. I will occasionally mix teams up so everyone has a chance to work together.

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>.

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/

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>.

Plagiarism Detection: The Turnitin service will be used to identify student submissions that contain unoriginal material. Your written assignments may be submitted to Turnitin for plagiarism detection and for no other purpose.

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/*

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.

Tentative Schedule

Week	Day	Date	Topic
1	M	Jan 8	Welcome, syllabus, course introduction and discussion
	W	Jan 10	Sustainable production systems and organic agriculture history and certification recap
	F	Jan 12	<i>Lab 1:</i> Weed identification and management plan (Dr. Peter Dittmar); Field examination; Project planning
2	M	Jan 15	No class (Martin Luther King Jr. Day)
	W	Jan 17	No class
	F	Jan 19	The sustainable agriculture practice standard: Is there a need?
3	M	Jan 22	Organic greenhouse production; Protected crop production systems
	W	Jan 24	Postharvest handling and storage, food safety (Dr. Steve Sargent)
	F	Jan 26	<i>Lab 2:</i> Project design, transplant production
4	M	Jan 29	Implementing whole farm IPM strategies (Bob Hochmuth)
	W	Jan 31	Intercropping and living mulch systems
	F	Feb 2	<i>Lab 3:</i> Irrigation techniques and improving irrigation water use efficiency (Dr. Lincoln Zotarelli)
5	M	Feb 5	Cover cropping systems
	W	Feb 7	Conservation biological control of insect pests (Dr. Susie Legaspi)
	F	Feb 9	<i>Lab 4:</i> Project planning and transplant production
6	M	Feb 12	Organic and sustainable pest management and techniques for monitoring pests (Dr. Oscar Liburd)
	W	Feb 14	Sustainable disease and pest management: Case studies (I)
	F	Feb 16	<i>Lab 5:</i> Field preparation and project; Fertilization calculations
7	M	Feb 19	Sustainable disease and pest management: Case studies (II)
	W	Feb 21	Introduction to precision agriculture and applications in specialty crops (Dr. Daniel Lee)
	F	Feb 23	<i>Lab 6:</i> Vegetable grafting; Field project
8	M	Feb 26	Is soil fertility in organic farming systems fundamentally different from that in conventional systems? An in-depth look at nutrient cycling, soil quality, and soil health
	W	Feb 28	Managing nitrogen and phosphorus sustainably with organic amendments (Dr. Gabriel Maltais-Landry)
	F	Mar 2	<i>Lab 7:</i> Visit UF/IFAS soil and water analysis lab; Field project

9	M	Mar 5	<i>No class (Spring Break)</i>
	W	Mar 7	
	F	Mar 9	
10	M	Mar 12	Use of compost for organic and sustainable farming
	W	Mar 14	Rotational no-till, mulching, and conservation tillage for organic vegetable farms
	F	Mar 16	<i>Lab 8: Field project</i>
11	M	Mar 19	Best Management Practices and organic farming
	W	Mar 21	Integrated livestock systems
	F	Mar 23	<i>Lab 9: Field project</i>
12	M	Mar 26	Biodynamic farming and integrated farming
	W	Mar 28	Carbon sequestration and beyond; Organic farming and ecological service
	F	Mar 30	<i>Lab 10: Field project</i>
13	M	Apr 2	Developing a business plan (Dr. Derek Farnsworth)
	W	Apr 4	Biodiversity and designing farm systems
	F	Apr 6	<i>Lab 11: Field trip (full day farm visits)</i>
14	M	Apr 9	International organic agriculture
	W	Apr 11	Can organic agriculture feed the world?; The organic debate
	F	Apr 13	<i>Lab 12: Field project activities</i>
15	M	Apr 16	Enlightening round
	W	Apr 18	Emerging issues in agricultural and food systems
	F	Apr 20	Field activities; Harvest
16	M	Apr 23	Review; Poster presentation
	W	Apr 25	Poster presentation