



HOS 3281C
Principles of Organic and Sustainable Crop Production
3 credits
Fall Semester 2024



Class	Time and location
Lectures	<ul style="list-style-type: none">Monday, Wednesday & Friday Period 6 12:50-1:40 PM1306/1308 Fifield Hall
Hands-on class project	<ul style="list-style-type: none">Time to be announced and confirmed in class during the semesterHorticultural Sciences Teaching Garden (1703 IFAS Research Drive, 32611) on UF campus

Instructor: Dr. Xin Zhao, Professor, Horticultural Sciences Department
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Teaching Assistants: Zach Ray (561-613-8182, ray.ztyler@ufl.edu)
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Office Hours: 1:40 – 2:10 PM on Monday, Wednesday & Friday. We also encourage students to call or email the instructor and TAs directly if there are any questions or concerns. Please also feel free to email us to request an in-person appointment or an online appointment via Zoom. For class-related communications, please use email within E-learning.

Course Description: This course encompasses biological, social, and economic components of organic farming systems and sustainable agriculture. This course discusses organic agriculture policy and regulations and emphasizes principles, concepts, cultural practices, techniques, marketing, and holistic approaches of organic crop production and sustainable farming systems.

Learning Objectives:

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

- Analyze how a farm functions as an agroecosystem.
- Evaluate the sustainability of farming operations including organic production.
- Apply a working knowledge of the regulatory procedures and requirements of certified organic production.
- Develop soil and nutrient management plans for organic and sustainable crop production that optimize nutrient cycling and minimize environmental degradation.
- Develop pest management plans that emphasize proactive systems approaches and minimize curative control measures.
- Apply holistic management to farming system establishment and development that targets long-term sustainability.
- Develop communication, teamwork, and leadership skills by designing and conducting hands-on class projects with peers.

Textbook: There are no required textbooks for this course. Book chapters, journal articles, websites, videos, and other materials will be collectively used. The E-learning (Canvas) portal (<http://elearning.ufl.edu/>) is used in this course to post lectures, assignments, reading materials, useful websites, video clips, study guides, quizzes, and grades, etc. This is an in-person course, please note that having access to the materials posted in the E-learning portal is not an excuse for missing classes.

Course Assessment Components and Grading:

Exams (320 points)

There are three exams in the semester. Exam #1 and Exam #2 are each worth 100 points, and the *cumulative* Final Exam is worth 120 points. Matching, true or false, multiple choice, short answer, calculation, and essay questions may be included in the exams. Under the circumstances of having a true emergency that does not allow the student to complete the exam as scheduled, a make-up exam can be requested. Official written documents need to be provided to the instructor about the emergency situation. The format of the make-up exam is at the instructor's discretion.

Quizzes (120 points)

There are eight online *open-book* quizzes in the semester. Each quiz is worth 15 points. Multiple choice, true or false, matching, calculation, and short answer questions may be included in the quizzes. Students will take the online quizzes in the E-learning portal. Each quiz is timed for 30 minutes and it can be taken twice with the highest score recorded as your grade. Students can refer to lecture slides, handouts, personal notes, and other reference materials, but each student must work *individually* and *independently*. Under the circumstances of having a true emergency that does not allow the student to complete the quiz as scheduled, a make-up quiz can be requested. Official written documents need to be provided to the instructor about the emergency situation. The format of the make-up quiz is at the instructor's discretion.

Writing Assignments (160 points)

There are four writing assignments with each worth 40 points.

- Assignment 1: A case study of a commercial farm as an agroecosystem
- Assignment 2 (*group* assignment): Incubator Farm budgeting and marketing
- Assignment 3: Soil fertility and soil health in sustainable and organic farming
- Assignment 4: Case studies of management practices used for organic crop production

All writing assignments should be submitted electronically in the E-learning portal. They are expected to be in neat, legible format with grammar, punctuation, and spelling errors at a very minimum. The due date is indicated in E-learning when the assignment is posted. Depending on the specific task, students will have 1 to 3 weeks (or longer) to complete the assignment. Late submissions will receive a score of zero unless there is a true emergency situation where written documentation is required.

Incubator Farm Class Project (200 points)

Each *group* of 4-5 students will assume the role of an aspiring and beginning farmer to start and operate an *experimental* Incubator Farm in the Horticultural Sciences Department Teaching Garden by addressing specific holistic management goals identified. This *student-driven* project is designed to provide an *experiential learning* opportunity for students to integrate key concepts, principles, and practices learned in the course in the exploration of understanding and developing organic and sustainable agricultural and food systems. Peer evaluations of each member's contribution to completion of the group project will be considered in calculating each member's Incubator Farm project final grade. Specific instructions on conducting and assessing the Incubator Farm class project activities and detailed information about using field production resources and tools in a professional manner will be posted in the E-learning portal and discussed during the first week of class.

Class Participation (50 points)

A simple reflection sheet will be used to evaluate student's participation in the learning community throughout the semester. Each reflection sheet is worth 10 points and a total of 5 reflection sheets need to be completed in the course based on the instructions posted in E-learning by the specified deadlines.

Grading:

Activity	Points possible	Percentage of final grade
Exam #1	100	11.8
Exam #2	100	11.8
Cumulative Final Exam	120	14.1
Quizzes (8 × 15 points)	120	14.1
Writing Assignments (4 × 40 points)	160	18.8
Incubator Farm Class Project	200	23.5
Class Participation (5 × 10 points)	50	5.9
Total points = 850		100%

All points earned in the course will be summed to calculate your final grade. Letter grades will be based on the performance of each student relative to the following standard percentages (%):

93 – 100	A	73 – 76.9	C
90 – 92.9	A-	70 – 72.9	C-
87 – 89.9	B+	67 – 69.9	D+
83 – 86.9	B	63 – 66.9	D
80 – 82.9	B-	60 – 62.9	D-
77 – 79.9	C+	< 60	E

Please feel free to discuss your grades with us at any time during the semester. Additional information on current UF grading policies for assigning grade points can be found here:

- *Grading policies*, <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>.

Course Policies and Resources:

Attendance and Make-up Policy

Attendance in this class is mandatory. However, you are allowed one unexcused absence during the semester without any influence on your final grade. More than one unexcused absence will result in a deduction in your final course grade by a third of a letter for each absence after one (for example, a grade of B+ would decrease to a B, a grade of A would decrease to an A-, with 2 unexcused absences). All students are encouraged to actively participate in class discussions and other class activities. You are required to attend every lecture and complete quizzes, exams, and assignments by the posted deadlines. Absences will be excused and late assignments will be graded only for documented emergencies following the UF's attendance policy.

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

- *UF Attendance policies*, <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>.

Accommodations for Students with Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

- *Disability Resource Center*, 001 Reid Hall, (352) 392-8565, <https://disability.ufl.edu/get-started/>.

Online Course Evaluation Process

- Student assessment of instruction is an important part of efforts to improve teaching and learning. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: <https://gatorevals.aa.ufl.edu/students/>.
- Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>.
- Summaries of course evaluation results are available to students at: <https://gatorevals.aa.ufl.edu/public-results/>.

Academic Honesty

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students 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.” The Honor Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TA in this class.

In-Class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct 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. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Health and Wellness Resources:

- *U Matter, We Care*: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit <https://umatter.ufl.edu/> to refer or report a concern and a team member will reach out to the student in distress.
- *Counseling & Wellness Center*: Visit <https://counseling.ufl.edu/> or call 352-392-1575 for information on crisis services as well as non-crisis services.
- *Student Health Care Center*: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit <https://shcc.ufl.edu/>
- *University Police Department*: 352-392-1111 (or 9-1-1 for emergencies), <https://police.ufl.edu/>.
- *UF Health Shands Emergency Room / Trauma Center*: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608, <https://ufhealth.org/locations/uf-health-shands-emergency-room-trauma-center/>.
- *GatorWell Health Promotion Services*: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit <https://gatorwell.ufsa.ufl.edu/> or call 352-273-4450.

Academic Resources

- *E-learning Technical Support*: Contact the UF Computing Help Desk (<https://it.ufl.edu/helpdesk/>) at 352-392-4357 or via e-mail at helpdesk@ufl.edu.
- *Career Connections Center*: Career assistance and counseling services. Reitz Union Suite 1300, 352-392-1601, <https://career.ufl.edu/>.
- *Library Support*: Various ways to receive assistance with respect to using the libraries or finding resources, <https://uflib.ufl.edu/>. Call 866-281-6309 or email ask@ufl.libanswers.com for more information.
- *Teaching Center*: 1317 Turlington Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring. <https://umatter.ufl.edu/office/teaching-center/>.
- *Writing Studio*: Daytime (9:30am-3:30pm): 2215 Turlington Hall, 352-846-1138 | Evening (5:00pm-7:00pm): 1545 W University Avenue (Library West, Rm. 339). Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>.
- *Academic Complaints*: Office of the Ombuds; Visit the Complaint Portal webpage for more information, <https://www.ombuds.ufl.edu/complaint-portal/>.
- *Enrollment Management Complaints (Registrar, Financial Aid, Admissions)*: View the Student Complaint Procedure webpage for more information, <https://em.ufl.edu/complaint>.

Tentative Class Schedule
HOS 3281C – Principles of Organic and Sustainable Crop Production

Week	Day	Date	Topic
1	F	Aug 23	Welcome, syllabus, and course introduction
2	M	Aug 26	The need for sustainable agriculture
	W	Aug 28	<i>Incubator Farm project work in the Teaching Garden</i>
	F	Aug 30	How do we define and develop sustainable agriculture? Concepts, principles, and challenges
3	M	Sept 2	<i>No class (Labor Day)</i>
	W	Sept 4	Agroecology: Science and foundation; Applying agroecosystem principles to farming; Holistic management and toolboxes
	F	Sept 6	Business planning and enterprise budgets (Dr. Derek Farnsworth)
4	M	Sept 9	<i>Incubator Farm project work in the Teaching Garden</i>
	W	Sept 11	<i>Incubator Farm project work in the Teaching Garden</i>
	F	Sept 13	The hidden cost of food (Dr. Mickie Swisher)
5	M	Sept 16	Organic agriculture overview: History, concepts, and regulations; Organic agriculture growth and consumer trend; Is organic farming sustainable?
	W	Sept 18	Organic certification 101 and organic system plan
	F	Sept 20	<i>Incubator Farm project work in the Teaching Garden</i>
6	M	Sept 23	Marketing organics and local foods (Dr. Allen Wysocki)
	W	Sept 25	Organic transition; Organic agriculture research and innovations
	F	Sept 27	The living soil (I) - Soil properties and processes: Physical
7	M	Sept 30	The living soil (II) - Soil properties and processes: Chemical; Review/Q&A
	W	Oct 2	Exam #1
	F	Oct 4	<i>Incubator Farm project work in the Teaching Garden</i>
8	M	Oct 7	The living soil (III) - Soil properties and processes: Biological
	W	Oct 9	Principles of soil quality and fertility management; NOP rules; The nutrient cycle: N – Does it differ between organic and conventional farming systems?
	F	Oct 11	The nutrient cycle: C, P, and K
9	M	Oct 14	Improving nutrient availability and use efficiency; Organic fertilizers and calculations

	W	Oct 16	Soil health principles, assessment, and management
	F	Oct 18	<i>No class (Homecoming)</i>
10	M	Oct 21	<i>Incubator Farm project work in the Teaching Garden</i>
	W	Oct 23	Animal manure and compost
	F	Oct 25	More on composting and compost application; Introducing regenerative agriculture
11	M	Oct 28	Cover crop and green manure
	W	Oct 30	Crop rotation; Review/Q&A
	F	Nov 1	Exam #2
12	M	Nov 4	Postharvest handling and quality (Dr. Jeff Brecht)
	W	Nov 6	Intercropping and companion planting
	F	Nov 8	Conservation tillage and introduction to organic no-till systems
13	M	Nov 11	<i>No class (Veterans Day)</i>
	W	Nov 13	Applying integrated pest management to organic production; NOP regulations on insect, disease, and weed control
	F	Nov 15	Breeding for organic crop production; <i>Incubator Farm project work in the Teaching Garden</i>
14	M	Nov 18	<i>Incubator Farm project work in the Teaching Garden</i>
	W	Nov 20	Organic livestock and poultry production; Urban agriculture and food systems
	F	Nov 22	Discussion with Florida Organic Growers
15	M	Nov 25	<i>No class (Thanksgiving)</i>
	W	Nov 27	
	F	Nov 29	
16	M	Dec 2	<i>Incubator Farm project showcase in the Teaching Garden</i>
	W	Dec 4	Long-term sustainability of organic farming; Final thoughts on building sustainable food systems; Review/Q&A

Cumulative Final Exam at 7:30-9:30 AM on Friday, December 13, 2024