



**HOS 3281C**  
**Principles of Organic and Sustainable Crop Production**  
3 credits  
Fall Semester 2022

**Stay Safe and Healthy!**

Class	Time and location
Lectures	<ul style="list-style-type: none"><li>Monday, Wednesday &amp; Friday Period 6 12:50-1:40 PM</li><li>2316 Fifield Hall</li></ul>
Hands-on class project	<ul style="list-style-type: none"><li>Time to be announced in class during the semester</li><li>Horticultural Sciences Teaching Garden (1703 IFAS Research Drive, 32611) on UF campus</li></ul>

**Instructor:** Dr. Xin Zhao, Professor, Horticultural Sciences Department  
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**Teaching Assistants:** Isaac Vincent (2229 Fifield Hall, 850-741-6239, [ivincent@ufl.edu](mailto:ivincent@ufl.edu))  
Zach Ray (2229 Fifield Hall, 561-613-8182, [ray.ztyler@ufl.edu](mailto:ray.ztyler@ufl.edu))

**Office Hours:** We 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 regulation and emphasizes principles, concepts, cultural practices, techniques, and marketing 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 approach and minimize curative control measures.
- Apply holistic management to farming system establishment and development that targets long-term sustainability.
- Critically evaluate strengths, weaknesses, opportunities, and threats for organic farming.
- Develop teamwork skills by designing and conducting class project 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. 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 circumstance 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 to 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 circumstance 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 (120 points)

There are four writing assignments with each worth 30 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 quality in sustainable and organic farming
- Assignment 4: Case studies of management practices used for organic 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 (180 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. Specific instructions on conducting and assessing the Incubator Farm class project activities will be posted in the E-learning portal and discussed during the first week of class.

### Class Participation (60 points)

A simple reflection sheet will be used to evaluate student's participation throughout the semester. Each reflection sheet is worth 10 points and a total of 6 reflection sheets need to be completed in the course based on the instruction posted in E-learning by the specified deadlines.

## Grading:

Activity	Points possible	Percentage of final grade
Exam #1	100	12.5
Exam #2	100	12.5
Cumulative Final Exam	120	15.0
Quizzes (8 × 15 points)	120	15.0
Writing Assignments (4 × 30 points)	120	15.0
Incubator Farm Class Project	180	22.5
Class Participation	60	7.5
<b>Total points = 800</b>		<b>100%</b>

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

#### COVID Related Practices

With regard to COVID, the university recommends – but does not require – people to wear masks on campus and encourages everyone to get vaccinated and stay current with boosters to minimize COVID-related risks.

- Please visit [coronavirus.UFHealth.org](https://coronavirus.UFHealth.org) and [coronavirus.ufl.edu](https://coronavirus.ufl.edu) for up-to-date information about COVID-19 and vaccination.

#### 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:

- *Counseling & Wellness Center:* Visit [www.counseling.ufl.edu](http://www.counseling.ufl.edu) or call 352-392-1575 for information on crisis services as well as non-crisis services.
- *U Matter, We Care:* If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [www.umatter.ufl.edu](http://www.umatter.ufl.edu) to refer or report a concern and a team member will reach out to the student in distress.
- *Student Health Care Center:* Call 352-392-1161 for 24/7 information to help you find the care you need, or visit [shcc.ufl.edu/](http://shcc.ufl.edu/).
- *University Police Department:* 352-392-1111 (or 9-1-1 for emergencies), [www.police.ufl.edu](http://www.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/emergency-room-trauma-center>.
- *GatorWell Health Promotion Services:* For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, <https://gatorwell.ufsa.ufl.edu/>.

### Academic Resources

- *E-learning Technical Support:* Contact the UF Computing Help Desk (<https://helpdesk.ufl.edu/>) at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).
- *Career Connections Center:* Career assistance and counseling services. Reitz Union Suite 1300, 352-392-1601, [www.career.ufl.edu](http://www.career.ufl.edu).
- *Library Support:* Various ways to receive assistance with respect to using the libraries or finding resources. <https://uflib.ufl.edu/find/ask/>.
- *Teaching Center:* Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring. <https://teachingcenter.ufl.edu/>.
- *Writing Studio:* 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>.
- *Student Complaints On-Campus:* Visit the Student Honor Code and Student Conduct Code webpage for more information. <https://sccr.dso.ufl.edu/policies/student-honor-%20code-student-conduct-code/>.
- *On-Line Students Complaints:* View the Distance Learning Student Complaint Process at <https://distance.ufl.edu/getting-help/student-complaint-process/>.

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

Week	Day	Date	Topic
1	W	Aug 24	Welcome, syllabus, and course introduction
	F	Aug 26	The need for sustainable agriculture; Incubator Farm project introduction
2	M	Aug 29	How do we define and develop sustainable agriculture? Concepts, principles, and challenges; Incubator Farm project discussion
	W	Aug 31	Agroecology: Science and foundation
	F	Sept 2	Applying agroecosystem principles to farming
3	M	Sept 5	<i>No class (Labor Day)</i>
	W	Sept 7	Developing a business plan (Dr. Derek Farnsworth)
	F	Sept 9	<i>Incubator Farm project work in the Teaching Garden</i>
4	M	Sept 12	Organic agriculture overview: History, concepts, and regulations; Organic agriculture growth and consumer trend; Is organic farming sustainable?
	W	Sept 14	Enterprise budgets in farm financial planning (Dr. Derek Farnsworth)
	F	Sept 16	The hidden cost of food (Dr. Mickie Swisher)
5	M	Sept 19	<i>Incubator Farm project work in the Teaching Garden</i>
	W	Sept 21	Organic certification and organic system plan
	F	Sept 23	Marketing organics and local foods (Dr. Allen Wysocki)
6	M	Sept 26	<i>Incubator Farm project work in the Teaching Garden</i>
	W	Sept 28	Holistic management and toolboxes; Organic agriculture research and innovations
	F	Sept 30	The living soil (I) - Soil properties and processes: Physical
7	M	Oct 3	Review/Q&A; Incubator Farm project discussion
	W	Oct 5	<b>Exam #1</b>
	F	Oct 7	<i>No class (Homecoming)</i>
8	M	Oct 10	<i>Incubator Farm project work in the Teaching Garden</i>
	W	Oct 12	The living soil (II) - Soil properties and processes: Chemical
	F	Oct 14	The living soil (III) - Soil properties and processes: Biological
9	M	Oct 17	The nutrient cycle: N

	W	Oct 19	The nutrient cycle: C, P, and K; Principles of soil quality and fertility management, NOP rules
	F	Oct 21	Organic fertilizers and calculations; Improving nutrient availability and use efficiency
10	M	Oct 24	Soil health principles and assessment
	W	Oct 26	<i>Incubator Farm project work in the Teaching Garden</i>
	F	Oct 28	Animal manure and compost
11	M	Oct 31	Cover crop and green manure
	W	Nov 2	Review/Q&A; Incubator Farm project discussion
	F	Nov 4	<b>Exam #2</b>
12	M	Nov 7	Crop rotation and intercropping
	W	Nov 9	Postharvest handling and food safety (Dr. Steve Sargent)
	F	Nov 11	<i>No class (Veterans Day)</i>
13	M	Nov 14	Conservation tillage and introduction to organic no-till systems
	W	Nov 16	Applying integrated pest management to organic production; NOP regulations on insect, disease, and weed control
	F	Nov 18	Organic insights from certifying agents and grassroots organic grower organizations
14	M	Nov 21	<i>Incubator Farm project work in the Teaching Garden</i>
	W	Nov 23	<i>No class (Thanksgiving)</i>
	F	Nov 25	<i>No class (Thanksgiving)</i>
15	M	Nov 28	Breeding for organic crop production; Organic livestock production NOP rules
	W	Nov 30	Biotechnology and sustainable agriculture (Dr. Kevin Folta)
	F	Dec 2	<i>Incubator Farm project showcase in the Teaching Garden</i>
16	M	Dec 5	Maintaining the organic integrity; Regenerative agriculture; Review and Q&A
	W	Dec 7	Can organic agriculture feed the world? Building sustainable food systems; Review and Q&A

**Cumulative Final Exam at 12:30-2:30 PM on Thursday, December 15, 2022**