

HOS 3281C
Principles of Organic and Sustainable Crop Production
 3 credits
 Fall Semester 2020

Hybrid Class	Time and Location
Online Lectures via Zoom	<ul style="list-style-type: none"> • Monday Period 6, 12:50-1:40 PM when there are no class project activities (see Class Schedule on page 7-8) • Wednesday & Friday Period 6 12:50-1:40 PM • Log in to E-learning (https://elearning.ufl.edu/) to attend Zoom class
In-person Hands-on Class Project Activities	<ul style="list-style-type: none"> • Monday period 6, 12:50-1:40 PM (see Class Schedule on page 7-8) • Location: Horticultural Sciences Teaching Garden (1703 IFAS Research Drive, 32611) on UF campus • See COVID Safety Plan on page 9-10

Instructor: Dr. Xin Zhao, Professor, Horticultural Sciences Department
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Office Hours: Due to the COVID-19 situation, we encourage students to call or email the instructor and TA directly if there are any questions or concerns. Please also feel free to email us to request 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, exams, and grades, etc. Please note that having access to the materials posted in the E-learning portal is not an excuse for missing classes.

Class Format and COVID Safety Plan: This is a hybrid course consisting of online lectures and in-person hands-on activities. All of the online lectures will be delivered synchronously via zoom following the class schedule. Students can join the zoom lecture class using the Zoom Conferencing tool in E-learning or directly using the zoom access information provided by the instructor. Recorded zoom lectures can be accessed in the E-learning portal using the Zoom Conferencing tool. The in-person hands-on activities will be conducted in the Horticultural Sciences Department Teaching Garden on campus on Monday or Wednesday during certain weeks and all in-person class activities will be completed before the Thanksgiving holiday break. The in-person hands-on class activity schedule may be subject to change due to inclement weather and other contingency situations. **The COVID safety plan (page 9-10)** developed for the course outlines the necessary safety measures and will serve as a guide to help ensure students and faculty are not exposed to/do not transmit the virus that causes COVID-19 when conducting hands-on practicum activities in the Teaching Garden.

Course Assessment Components and Grading:

Exams (320 points)

There are three online open-book exams in the semester. Exams #1 and #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. Students will take the online exams in the E-learning portal. Exams #1 and #2 are limited to 100 minutes, and the Final Exam is limited to 120 minutes. 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 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 six online open-book quizzes in the semester. Each quiz is worth 20 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: Soil fertility and quality in sustainable and organic farming
- Assignment 3: Case studies of management practices used for organic production
- Assignment 4: Incubator Farm budgeting and marketing

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 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 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. The COVID safety plan will be implemented for safely conducting the hands-on activities in the Teaching Garden.

Class Participation (60 points)

A simple weekly reflection sheet will be used to evaluate student's participation throughout the semester. Each reflection sheet is worth 5 points and a total of 12 reflection sheets need to be completed in the course based on the weekly instruction posted in E-learning by the specified deadlines.

Grading:

Activity	Points possible
Exam #1	100
Exam #2	100
Cumulative Final Exam	120
Quizzes (6 × 20 points)	120
Writing Assignments (4 × 30 points)	120
Incubator Farm Class Project	180
Class Participation	60

Total points = 800

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 (%):

100 – 93	A	<77 – 73	C
<93 – 90	A-	<73 – 70	C-
<90 – 87	B+	<70 – 67	D+
<87 – 83	B	<67 – 63	D
<83 – 80	B-	<63 – 60	D-
<80 – 77	C+	<60 – 0	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 as per 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/>.

Recorded Class Sessions and Student Privacy

Our course lecture sessions via zoom may be audio visually recorded for students in the class to refer back. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. Unauthorized recording and unauthorized sharing of recorded materials is prohibited.

COVID Related Practices

We will have face-to-face hands-on activity sessions to accomplish the student learning objectives of this course. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-class interactions.

- You are required to wear approved face coverings at all times during class in the teaching garden as specified in our class **COVID safety plan**. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.
- Sanitizing supplies are available in the teaching garden for you to use throughout the class period as outlined in our class **COVID safety plan**.
- Follow our class **COVID safety plan** on how to enter and exit the teaching garden. Practice physical distancing to the extent possible when entering and exiting the teaching garden.
- If you are experiencing COVID-19 symptoms (guidance from the CDC on symptoms of coronavirus: <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>),² please use the UF Health screening system and follow the instructions on whether you are able to attend class (UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms: <https://coronavirus.ufhealth.org/screen-test-protect/covid-19-exposure-and-symptoms-who-do-i-call-if/>)
- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work (more information in the university attendance policies: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>).

Technical Difficulties

If you are experiencing technical difficulties with Canvas, you should immediately contact the UF Help Desk. This will generate a ticket number, which documents the date and time of your technical difficulty. Any requests to make-up late work due to technical difficulties must be accompanied by this ticket number.

- *UF Help Desk*, HUB 132, (352) - 392 - 4357, <http://helpdesk.ufl.edu/>

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. 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

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: <https://sccr.dso.ufl.edu/process/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 when 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.

- *Disability Resource Center*, 0001 Reid Hall, (352) 392-8565, <https://disability.ufl.edu/>.

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, 392-1575, www.counseling.ufl.edu.
 - Counseling Services
 - Groups and Workshops
 - Outreach and Consultation
 - Self-Help Library
 - Wellness Coaching
- *U Matter We Care*, www.umatter.ufl.edu.
- *Student Health Care Center*, 352-392-1161, shcc.ufl.edu/.
- *University Police Department*, 352-392-1111 (or 9-1-1 for emergencies), www.police.ufl.edu.

Additionally, if you would like orientation on choosing a major, finding an internship, or planning your career, we encourage you to use the university's on-campus resources.

- *Career Connections Center*, Reitz Union Suite 1300, 352-392-1601, www.career.ufl.edu.

Student Complaints

- Residential course: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>.
- Online course: <http://www.distance.ufl.edu/student-complaint-process>.

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

Week	Day	Date	Topic
1	M	Aug 31	Welcome, syllabus, and course introduction
	W	Sept 2	The need for sustainable agriculture; Incubator Farm project introduction
	F	Sept 4	How do we define and develop sustainable agriculture? Concepts, principles, and challenges; Incubator Farm project discussion
2	M	Sept 7	<i>No class (Labor Day)</i>
	W	Sept 9	Incubator Farm project work in the Teaching Garden
	F	Sept 11	Agroecology: science and foundation
3	M	Sept 14	Incubator Farm project work in the Teaching Garden
	W	Sept 16	Applying agroecosystem principles to farming; Holistic management and tool boxes
	F	Sept 18	Developing a business plan (Dr. Derek Farnsworth)
4	M	Sept 21	Incubator Farm project work in the Teaching Garden
	W	Sept 23	Organic agriculture overview: history, concepts, growth, consumer trend, and regulations. Is organic farming sustainable?
	F	Sept 25	Marketing organics and local foods (Dr. Allen Wysocki)
5	M	Sept 28	Incubator Farm project work in the Teaching Garden
	W	Sept 30	Organic certification and organic system plan
	F	Oct 2	Breeding for organic production; Organic agriculture research (<i>Exam #1 posted, due 10/7</i>)
6	M	Oct 5	Incubator Farm project work in the Teaching Garden
	W	Oct 7	Enterprise budgets in farm financial planning (Dr. Derek Farnsworth)
	F	Oct 9	Food supply chains (Dr. Mickie Swisher)
7	M	Oct 12	Incubator Farm project work in the Teaching Garden
	W	Oct 14	The living soil. Soil properties and processes: physical
	F	Oct 16	The living soil. Soil properties and processes: chemical
8	M	Oct 19	The living soil. Soil properties and processes: biological
	W	Oct 21	The nutrient cycle: N
	F	Oct 23	The nutrient cycle: C, P, and K
9	M	Oct 26	Incubator Farm project work in the Teaching Garden

9	W	Oct 28	Principles of soil quality and fertility management, NOP rules
	F	Oct 30	Organic fertilizers and calculations
10	M	Nov 2	Incubator Farm project work in the Teaching Garden (<i>Exam #2 posted, due 11/5</i>)
	W	Nov 4	Animal manure and compost
	F	Nov 6	Cover crop and green manure
11	M	Nov 9	Crop rotation and intercropping
	W	Nov 11	<i>No class (Veterans Day)</i>
	F	Nov 13	Conservation tillage; Soil health assessment
12	M	Nov 16	Incubator Farm project work in the Teaching Garden
	W	Nov 18	Applying integrated pest management to organic production
	F	Nov 20	NOP regulations on insect, disease, and weed control
13	M	Nov 23	Incubator Farm project showcase
	W	Nov 25	<i>No class (Thanksgiving)</i>
	F	Nov 27	<i>No class (Thanksgiving)</i>
14	M	Nov 30	Organic livestock production NOP rules; Food quality and safety
	W	Dec 2	Biotechnology and sustainable agriculture (Dr. Kevin Folta)
	F	Dec 4	Organic agriculture: Opportunities and challenges (Dr. Juan Carlos Rodriguez from Florida Organic Growers)
15	M	Dec 7	Maintaining the organic integrity; Value-added agriculture
	W	Dec 9	Can organic agriculture feed the world? Building sustainable food systems; Review

Cumulative Final Exam due Wednesday, Dec. 16, 2020 in E-learning

HOS 3281C COVID Safety Plan

The goal of this Safety Plan is to outline the necessary safety measures for ensuring faculty and students are not exposed to/do not transmit the virus that causes COVID-19 when conducting hands-on class project activities in the Horticultural Sciences Department Teaching Garden on campus. The safety plan document will be provided to students and discussed on the first day of class.

Requirements for Students

- Students must wear face masks and practice appropriate social distancing by maintaining a minimum distance of 6 ft when arriving at the teaching garden. Each student is required to use the hand sanitizer provided to clean their hands upon arrival and then wear the gloves provided for conducting class project activities in the teaching garden. Face masks and gloves should be worn throughout the hands-on activity period. Students are only allowed to work in the designated areas and everyone must strictly follow social distancing and avoid physical contact (handshakes, hugs, etc.) at all times during class. Students are encouraged to follow appropriate social distancing protocols outside of class activities.

Requirements for Instructors and TA's

- Instructors and TA's must wear face masks and practice appropriate social distancing by maintaining a minimum distance of 6 ft when arriving at the teaching garden. Everyone is required to use the hand sanitizer provided to clean their hands upon arrival and then wear the gloves provided for conducting class activities in the teaching garden. Face masks and gloves should be worn throughout the hands-on activity period. Instructors and TA's must strictly follow social distancing and avoid physical contact (handshakes, hugs, etc.) at all times during in-class activities. Instructors and TA's are encouraged to follow appropriate social distancing protocols outside of classroom activities.

Teaching Space

- All hands-on class activities will take place in the open field areas of the teaching garden. Students will not be permitted to use the teaching greenhouse or access the confined space of storage units located in the teaching garden. The teaching greenhouse and storage units will be used or accessed solely by the instructor and TA's for the purpose of preparing materials needed for class-related activities. When using the greenhouse or accessing the storage units, social distancing will be required and care will be taken to avoid exceeding the maximum occupancy of one person per 150 ft².
- Designated plot areas in the teaching garden will be marked clearly in the field for students' activities to meet the social distancing requirement. Four students within a group will be working in each field plot and the plot size will be more than sufficient for implementing social distancing. A measuring stake of 6 ft will be placed in each field plot to constantly remind students of the social distancing requirement. An electronic copy of the teaching garden field plot map with instructions for maintaining physical distance will be provided to each student before class to help students easily locate their designated plot areas and clearly understand the social distancing requirement for conducting class project activities.
- Use of the produce washing station will be limited to single-occupancy to ensure social distancing. Students may take the harvested produce home for consumption; however, tasting or consuming the harvested produce in the teaching garden is not allowed.
- Bathrooms and water fountain areas inside the teaching garden building will be limited to single-occupancy use to maintain appropriate social distancing protocols.

Cleaning Procedures

- To encourage a clean and safe working space for students and faculty, shared equipment, supplies, and contact surfaces including, but not limited to, garden tools, containers, benches, tables, and sinks, etc. will be cleaned (using soapy water or cleaning wipes) and sanitized (using alcohol or other disinfectant wipes/spray) before and after each class period by the TA's. Students are also required to clean all gardening equipment, tools, and contact surfaces, etc. prior to use, and after use to ensure clean working space.

Contingency Plans

- In the event of inclement weather resulting in cancellation of in-person hands-on activities, every attempt will be made to notify students of the cancellation the day before the scheduled activity. Lecture class will be conducted online via zoom instead, and rescheduling of field activities will be made as appropriate. If the class activities cannot be rescheduled, an online make-up module will be developed by the instructor and delivered via zoom.
- In the event a person (instructor, TA, or student) attending the class becomes ill due to COVID-19, the decision to cancel in-person activities will be made in a timely manner and every attempt will be made to notify students of the cancellation the day before the scheduled activity. Lecture class will be conducted online via zoom instead, and rescheduling of field activities will be made as appropriate. A thorough cleaning of equipment, tools, and contact surfaces will be carried out before resuming the hands-on class project activities in the teaching garden following the guidelines and recommendations from CDC and UF Health. The sick person with COVID-19 infection symptoms will not be allowed to return to hands-on class project activities until the she/he recovers and the criteria met following the guidelines and recommendations from CDC and UF Health. If the cancelled class project activities cannot be rescheduled, an online make-up module will be developed by the instructor and delivered via zoom.
- If the university has to cancel in-person instruction, online modules covering the learning objectives of the cancelled hands-on activities will be developed by the instructor and delivered via zoom.

All in-person hands-on class activities will be completed before the Thanksgiving holiday break.