

HOS 3020C – Principles of Horticultural Crop Production

4 credits

Fall Semester 2020

Hybrid Class	Time and Location
Online Lectures via Zoom	<ul style="list-style-type: none">• Wednesday Period 3, 9:35-10:25 AM• Friday Periods 3&4, 9:35-11:30 AM• Log in to E-learning (https://elearning.ufl.edu/) to attend Zoom class
In-person Hands-on Practicum Activities	<ul style="list-style-type: none">• Monday period 3, 9:35-10:25 AM (see Class Schedule on page 7-8)• Location: Horticultural Sciences Teaching Garden (1703 IFAS Research Drive, 32611) and Teaching Orchard on UF campus• See COVID Safety Plan on page 9-10

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Teaching Assistant: Isaac Vincent (1235 Fifield Hall, 850-741-6239, ivincent@ufl.edu) – Vegetable crops section

Office Hours: Unfortunately, physical meetings become challenging due to the COVID-19 situation. We encourage students to call or email the instructors 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.

Pre-requisites: BOT2010C or equivalent

Course Description:

This course introduces students to concepts and practices used to produce fruit and vegetable crops in Florida, the U.S., and globally. Topics covered include production regions, crop biology, crop nutrition, types of fruits and vegetables, disease and pest management, and marketing. This course includes a hands-on practicum.

Learning Objectives:

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

- Discuss growth and development patterns for fruit and vegetable species.
- Explain production conditions and practices for fruit and vegetable crops and compare the various cultural systems.
- Apply irrigation, fertilization, pruning, transplanting, and harvesting techniques in fruit and vegetable production.
- Create management plans for soil fertility, irrigation, and pest control in fruit and vegetable production.
- Critically analyze data from the fruit and vegetable industries at the regional, national, and global levels.
- Evaluate different marketing strategies for fruit and vegetable crops.

Textbooks:

There is not a required textbook for this course. The following textbooks are optional reference materials. They are placed on *Course Reserve* at Marston Science Library:

- 1) John M. Swiader and George W. Ware. 2002. Producing vegetable crops. Fifth edition. Interstate Publishers, Inc.
- 2) Vincent E. Rubatzky and Mas Yamaguchi. 2012. World vegetables: Principles, production and nutritive values. Second edition. Springer.
- 3) Donald N. Maynard and George J. Hochmuth. 2007. Knott's handbook for vegetable growers. Fifth edition. John Wiley & Sons, Inc.
- 4) D. Jackson, N. Looney, M. Morley-Bunker and G. Thiele. 2011. Temperate and Subtropical Fruit Production. CABI International.

Class Format and COVID Safety Plan: This is a hybrid course consisting of online lectures and in-person hands-on practicum activities. E-learning – Canvas (<https://elearning.ufl.edu/>) will be used to post class lectures, assignments, quizzes, exams, resources, grades, and other relevant course materials and to help facilitate class interactions outside of the scheduled class time. 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 using directly 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 practicum activities will be conducted in the Horticultural Sciences Department Teaching Garden (vegetable crops section) and Teaching Orchard (fruit crops section) on campus every Monday and all in-person practicum activities will be completed before the Thanksgiving holiday break. The weekly practicum 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 and Teaching Orchard.

Course Assessment Components and Grading:

1. Exams

400 points

There will be four cumulative exams in the semester, two in the vegetable crops section and two in the fruit crops section. Exams 1-3 will take place during scheduled class periods. Exam 4 will take place during finals week. Students will take the exams in the E-learning portal. All exams are open book and each exam is limited to 100 minutes. Students can refer to lecture slides, handouts, personal notes, and other reference materials, but each student must work individually and independently. Each exam will be graded out of 100 points. Multiple choice, true or false, matching, calculation, short answer, and essay questions may be included in the exams. Students will be informed when the exam becomes available in the E-learning portal. Each exam will be available in the E-learning portal for 3 days before the due date.

2. Quizzes

80 points

There will be eight online open-book quizzes in the semester, four in the vegetables section and four in the fruits section. Each quiz will be timed to 20 minutes. Students can refer to lecture slides, handouts, personal notes, and other reference materials, but each student must work individually and independently. Each quiz will be graded out of 10 points. Multiple choice, true or false, matching, and calculation questions may be included in the quizzes. Each quiz will be available in the

E-learning portal for 3 days before the due date. Students will be informed when the quiz becomes available in E-learning.

3. Class Attendance and Participation 60 points

Students are required to participate actively in each online zoom lecture. Please follow the Best Practices for Attending a Zoom Class posted in the E-learning portal to get prepared for active learning. During the zoom lecture, students will be engaged in organized discussions and are encouraged to ask or answer questions. Zoom lecture class attendance and participation will be graded based on the following rubric. In addition to the assessment by instructors, self-evaluation conducted by each student will be used in determining the final class participation grade. The practicum participation score will be factored into the practicum assessment final grade.

Attendance and Participation frequency	Score	Participation quality	Score
Never	6	Poor	6
Rarely	12	Fair	12
Sometimes	18	Good	18
Often	24	Very good	24
Always	30	Excellent	30

4. Horticultural Production Practicum 260 points

Students are required to participate actively in the hands-on practicum that will take place in the Teaching Garden (vegetable crops section) and Teaching Orchard (fruit crops section) on campus. The practicum activities are designed for students to apply concepts and techniques covered in lecture to fruit and vegetable crop production and management and solve problems in a practical setting. The vegetable crops practicum and fruit crops practicum will be each worth 130 points. Specific instructions on conducting and assessing hands-on practicum activities for each section will be posted in the E-learning portal and discussed on the first day of class. The COVID safety plan will be implemented for safely conducting the in-person practicum activities in the Teaching Garden and Teaching Orchard.

Grading:

Activity	Points possible
Exam #1	100
Exam #2	100
Exam #3	100
Exam #4	100
Quizzes (8 x 10 points)	80
Practicum – vegetable crops section	130
Practicum – fruit crops section	130
Class attendance and 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

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 Recourses:

Attendance and Make-up Policy

Test makeups will be arranged only in the case of documented illness/emergency. 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 unmute 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 practicum 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-classroom interactions.

- You are required to wear approved face coverings at all times during class in the teaching garden and orchard 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 and orchard 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 and orchard. Practice physical distancing to the extent possible when entering and exiting the teaching garden and orchard.
- 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>), 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/>).

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.

E-learning Technical Support

- Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

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 3020C – Principles of Horticultural Crop Production
Fall 2020

Week	Date	Day	Topic
1	Aug 31	M	Introduction and course requirements
	Sept 2	W	Vegetables and the vegetable industry
	Sept 4	F	Classifying vegetables; Assessing vegetable quality attributes
2	Sept 7	M	<i>Labor Day (No Class)</i>
	Sept 9	W	Vegetable Crops Practicum
	Sept 11	F	Vegetable growing conditions; Vegetable plant growth and development patterns
3	Sept 14	M	Vegetable Crops Practicum
	Sept 16	W	General cultural practices for vegetables
	Sept 18	F	Mulch use in vegetable production; Vegetable seeds and crop establishment
4	Sept 21	M	Vegetable Crops Practicum
	Sept 23	W	Soil and nutrient management in vegetable production (I)
	Sept 25	F	Soil and nutrient management in vegetable production (II); Vegetable grafting
5	Sept 28	M	Vegetable Crops Practicum
	Sept 30	W	BMP and Fertilization calculations
	Oct 2	F	Irrigation systems for vegetable crops
6	Oct 5	M	Vegetable Crops Practicum
	Oct 7	W	IPM and plant health management
	Oct 9	F	Breeding and improving vegetables; Review
7	Oct 12	M	Vegetable Crops Practicum
	Oct 14	W	Protected agriculture for vegetable production; Organic crop production
	Oct 16	F	Vegetable marketing; Innovative technologies; Review
8	Oct 19	M	Vegetable Crops Practicum
	Oct 21	W	World and U.S. fruit production

	Oct 23	F	Climate effects on fruit production
9	Oct 26	M	Fruit Crops Practicum
	Oct 28	W	Orchard site selection and preparation
	Oct 30	F	Cold acclimation, cold hardiness and freeze protection
10	Nov 2	M	Fruit Crops Practicum
	Nov 4	W	Dormancy and chilling
	Nov 6	F	Fruit crops propagation, grafting, and budding
11	Nov 9	M	Fruit Crops Practicum
	Nov 11	W	<i>Veterans Day (No Class)</i>
	Nov 13	F	Use of rootstocks in fruit production
12	Nov 16	M	Fruit Crops Practicum
	Nov 18	W	Training and pruning systems
	Nov 20	F	Flowering, fruit set, and fruit thinning
13	Nov 23	M	Fruit Crops Practicum
	Nov 25	W	<i>Thanksgiving (No Class)</i>
	Nov 27	F	<i>Thanksgiving (No Class)</i>
14	Nov 30	M	Plant hormones and plant growth regulators
	Dec 2	W	Fruit crop nutrition and fertilization
	Dec 4	F	Fruit crop irrigation management
15	Dec 7	M	Harvesting fruit crops
	Dec 9	W	Current and emerging issues in fruit production

HOS 3020C 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 practicum activities in the Horticultural Sciences Department Teaching Garden and Teaching Orchard 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 or orchard. Each student is required to use the hand sanitizer provided to clean their hands upon arrival and then wear the gloves provided for conducting practicum activities in the teaching garden or orchard. 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 in-class practicum. 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 or orchard. 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 or teaching orchard. 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 practicum activities. In the teaching orchard, group activities will not exceed 10 students and one instructor per group. Groups will be in defined areas of the orchard, and social distancing will be practiced within groups.

- 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 practicum 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 class practicum activities in the teaching garden or teaching orchard 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 practicum activities until the she/he recovers and the criteria met following the guidelines and recommendations from CDC and UF Health. If the cancelled class practicum 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.