

Crop Ecology – Web

AGR 5511 (3 Credits) – Fall 2022

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Course description: Crop Ecology examines underlying ecological processes in agricultural systems, focusing on interactions between crops and their abiotic and biotic environments, building to a conceptual and quantitative understanding of crop yield formation. Emphasis will be placed on current challenges and problems in agriculture and how a crop ecological perspective can help to address these challenges. Course content is intended to encourage student advancement in literacy, numeracy, written and oral communication and independence of thought.

Course objectives: by the end of the course, students will be able to

- Analyze how the biotic and abiotic environment affects crop performance and articulate how human management alters these relations;
- Describe crop yield potential and analyze the factors that determine and limit it across varying production environments;
- Identify challenges and problems in agricultural systems and devise ideas and management practices to help solve these problems;
- Apply crop ecophysiological principles to predict responses of agricultural systems to global change;
- Discuss and summarize ecological services provided by agricultural systems and how human management can impact them;
- Synthesize crop ecological knowledge in development of a written grant to an external funding agency

Class Schedule: Course content will be provided through the UF e-Learning canvas platform. Although the content is delivered asynchronously, it will be provided in sections or modules that you will have approximately 18 days to complete. Once you complete each module, the content for the next module will be made available. You will find links to all the material on the class home page.

Course Module/Topic List:

1. Introduction, Green Revolution and Contemporary Agriculture
2. Fundamentals of Crop Growth and Yield
3. Crop Responses to the Abiotic Environment, Yield Formation Equation

4. Managing Energy Balance: Radiation and Temperature in Agroecosystems
5. Water and Nutrients in Agroecosystems
6. Biotic Interactions in Agroecosystems, Crop Diversity and Ecosystem Services
7. Agriculture and the Climate Crisis
8. Peer Evaluation of Grant Proposals

Office Hours: Students are encouraged to contact the instructor by e-mail (chwilson@ufl.edu) to address questions regarding course content and management. I will also occasionally use the discussion board tool to address student questions related to course content. I also strongly encourage students to interact with each other through the collaborative tools provided by the e-Learning system.

Live Discussion: although this course is 100% online, there is a recommended live chat session scheduled for 5-6PM on Wednesdays. The instructor will provide mini reviews, discussion prompts based on current topics and news items, and answer all questions students have about course content or related topics. Details provided on the course website.

Course Textbook:

There is no required textbook for the course. I will, however, refer to the following books throughout the course. Other additional readings, generally from the primary literature, will also be provided.

“*Crop ecology: productivity and management in agricultural systems*”, D. J. Connor, R. S. Loomis and K.G. Cassman. 2nd ed. Cambridge University Press. 2011. 562 pp.

“*Agroecology. The ecology of sustainable food systems*”, S. R. Gliessman. CRC Press. 2007.

Instructional approach: Dr. Wilson will provide all instructional content. If you are having any problems with the course or need assistance, don't wait until late in the semester to contact the instructor. The sooner we begin to address the problem, the more likely you will achieve a satisfactory outcome.

Students are responsible for all material covered in the lecture modules, readings, and all other assigned materials. Keeping up with the material is important for mastering course content. You will also be expected to complete assignments and exams on time.

Quizzes will be available on the dates indicated on your class homepage and will be available through the e-Learning system for a limited time. The final quiz in the semester must be taken with a live proctor. The quizzes must be completed by the indicated due date and time. Once you begin a quiz you will have a fixed amount of time to complete all the questions. You will not be given credit for questions not completed during the allotted time. The quizzes will emphasize material covered in that module, but some material on the quizzes could be comprehensive as we build on concepts in previous modules. Quizzes will be closed book (any necessary formulas/equations will be provided in the exam). Class notes, search engines, cell phones, assistance from others, etc. are NOT allowed for the quizzes.

Attendance: Students are responsible for understanding all material provided through Canvas. Students are also responsible for meeting deadlines for assignments, literature reflections, quizzes, proposal, etc. as indicated in the course schedule. There will be no make-up quizzes or assignments except for excused emergencies. Make-up work should be arranged prior to the excused expected absence if possible (e.g., university-sanctioned events), or as soon as possible for unexpected excused absences (e.g., illness or death in the immediate family).

Grading: There will be a total of 575 points for the class. The six quizzes will count 50 points each for a total of 300 points. The total point value of two simulation assignments will be worth 50 points (2 at 25 points each). You will also be required to submit a SARE graduate student proposal on a topic of interest to you (hopefully tied to your research or non-thesis project) related to crop ecology that will be approved by the instructor for 100 points and you will submit an abstract and bibliography prior to moving forward with the proposal for 25 points. You will be responsible for peer reviewing and ranking proposals for 25 points also. There will also be two literature reflection assignments for a total of 50 points. Throughout the semester there will be questions (5 total) posted on the discussion board related to your readings and content that you will be expected to respond to for 5 points each for a total of 25 points.

<u>Item</u>	<u>Points</u>
Quizzes (6)	300
Assignments (2)	50
Discussion board questions (5)	25
Proposal abstract and bibliography	25
Proposal	100
Proposal peer review	25
Literature reflections (2)	<u>50</u>
Total	575

Assigned exercises, proposals, discussion questions, literature reflections, and quizzes will be graded based on completeness, conciseness, clarity, effort, organization, and originality and/or as indicated in rubrics where provided.

Students attaining the following percentages are guaranteed at least the following grades:

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

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> (Links to an external site.)

Statement of Privacy Rights

Some class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. 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. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Online Course Evaluation

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/> (Links to an external site.). 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/> (Links to an external site.). Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/> (Links to an external site.).

Accommodations for Students with Disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/ (Links to an external site.)) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

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 (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/> (Links to an external site.)) 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 TAs in this class.

It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor.

This policy will be vigorously upheld at all times in this course.

Campus Resources

Health and Wellness

- *U Matter, We Care*: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392- 1575 so that a team member can reach out to the student.
- *Counseling and Wellness Center*: <https://counseling.ufl.edu/> (Links to an external site.), 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.
- *Sexual Assault Recovery Services (SARS)*: Student Health Care Center, 392-1161.
- *University Police Department*: 392-1111 (or 9-1-1 for emergencies).
<http://www.police.ufl.edu/> (Links to an external site.)
- *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; [Visit the UF Health Emergency Room and Trauma Center website.](#) (Links to an external site.)
- *GatorWell Health Promotion Services*: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the [GatorWell website](#) (Links to an external site.) or call 352-273-4450.

Academic Resources

- *E-learning technical support*, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml> (Links to an external site.).
- *Career Connections Center*, Reitz Union, 392-1601. Career assistance and counseling. <https://career.ufl.edu/> (Links to an external site.)
- *Library Support*, <http://cms.uflib.ufl.edu/ask> (Links to an external site.). Various ways to receive assistance with respect to using the libraries or finding resources.
- *Teaching Center*, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. <http://teachingcenter.ufl.edu/> (Links to an external site.)
- *Writing Studio*, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio/> (Links to an external site.)
- *Student Complaints On-Campus*: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/> (Links to an external site.)
- *On-Line Students Complaints*: <http://distance.ufl.edu/student-complaint-process/>