

## AGR 5511 Crop Ecology

Fall, 2025

Online Asynchronous, 3 Credits

### Instructor

Chris H. Wilson

Agronomy Department

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Office Hour: Tuesdays 4-5PM (Zoom Link Provided)

### Teaching Assistant

Samuel Flores

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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 insight into agricultural ecosystems, and promote analytical skills, written communication and independence of thought.

### Course Learning Objectives

- 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

## Course Prerequisites

AGR 4210, [BOT 3503](#), PCB 3043C, or equivalent (please reach out)

## Textbooks, Learning Materials, and Supply Fees

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.

- *“Principles of Ecology in Plant Production”*, 2<sup>nd</sup> Edition. T Sinclair, and A Weiss.
- *“Crop ecology: productivity and management in agricultural systems”*, D. J. Connor, R. S. Loomis and K.G. Cassman. 2<sup>nd</sup> ed. Cambridge University Press. 2011. 562 pp.

## Instructor Interaction Plan

Dr Wilson will provide course materials through posted lectures, readings, and organized materials in online modules. Dr Wilson and/or a course TA will provide assessments and feedback on student assignments via the e-learning course platform and will also be available to schedule individual meetings. We will also have a regularly scheduled open office hour to discuss course content and its application to topic areas of interest to students.

## Technical Support

UF Computing Help Desk & Ticket Number: All technical issues require a UF Helpdesk Ticket Number. The UF Helpdesk is available 24 hours a day, 7 days a week. <https://helpdesk.ufl.edu/> | 352-392-4357

## Course Module List and Schedule

The course is divided into discrete modules grouped around topic themes, as listed below. Each module lasts approximately two weeks, contains course material delivered in a variety of modalities, and concludes with a quiz. Given the weekly schedule of office hours, there will always be time for instructor interaction within a module.

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

## Grading Policy

Course grading is consistent with [UF grading policies](#).

## Course Grading Structure

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, **AI tools**, cell phones, assistance from others, etc. are NOT allowed for the quizzes.

Assignment Type	Point Value	Percent of Final Grade
Quizzes (6X)	300	52%
Analytical Assignments (4X)	100	18%
Discussion Board (5X)	25	4%
Proposal	125	22%
Proposal Peer Review	25	4%

## Grading Scale

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. It is assumed all work will be completed independently unless the assignment is defined as a group project, in writing by the instructor. Working independently excludes use of machine learning tools like ChatGPT to complete your discussion posts and exams, or other written assignments. Guidance on use of generative AI tools to foster the research process will be provided during office hours, recorded and posted to the course website.

Grade	Points	Percentage
A	540-575	94-100
A-	517-539	90-93.9
B+	500-516	87-89.9
B	477-499	83-86.9
B-	460-476	80-82.9
C+	442-459	77-79.9
C	419-441	73-76.9
C-	402-418	70-72.9
D+	385-401	67-69.9
D	362-384	63-66.9
D-	345-361	60-62.9
S	<345	<60

## Academic Policies and Resources

Academic policies for this course are consistent with university policies. See

<https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/>

## Campus Health and Wellness Resources

Visit <https://one.ufl.edu/whole-gator/topics> for resources that are designed to help you thrive physically, mentally, and emotionally at UF.

Please contact [UMatterWeCare](#) for additional and immediate support.

## 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.

## Privacy and Accessibility Policies

- Instructure (Canvas)
  - [Instructure Privacy Policy](#)
  - [Instructure Accessibility](#)
- Zoom
  - [Zoom Privacy Policy](#)
  - [Zoom Accessibility](#)

