

Plant/Herbicide Interaction

PLS 6655

Agronomy Department - University of Florida
Spring Semester, 2020

Instructors:

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Class Schedule:

This is an online course, but **NOT** a go-at-your-own-pace course. Students are expected to watch the lectures and complete the accompanying assignments (quizzes, discussion posts, etc.) during their assigned week.

Course Website:

Course material and communication will be provided through the Canvas site at <http://lss.at.ufl.edu>. For technical issues associated with the course material and delivery, please contact the instructor or <http://helpdesk.ufl.edu>

Course Description:

This **3 credit** course will address chemical, biochemical and physiological aspects of herbicides. Application methodology and environmental fate will be discussed. Other aspects of herbicides that will be covered include: structure, physical and chemical characteristics, uptake, translocation, mechanism of action, selectivity mechanisms, factors affecting performance, and tolerance. Current issues such herbicide resistance and genetically modified crops will also be discussed.

Course Prerequisites:

Plant Physiology, Plant Biochemistry, Organic Chemistry, Introduction to Weed Science - helpful but not required.

Course Objectives:

By the end of this course, students will be able to:

- 1) Explain how particular herbicides selectively work to control some plants (weeds) and not injure other plants (crops).
- 2) Explain how genetically modified crops are developed to tolerate certain herbicides.
- 3) Identify and differentiate symptoms caused by herbicides
- 4) Critically evaluate the scientific literature concerning herbicide activity.

Office Hours:

By appointment – send an email to schedule a time. For those students located off-campus, phone or video conference will be arranged.

Class Participation:

Students are expected to participate in discussion boards with other students and the instructor.

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:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Textbooks:

Herbicide Handbook of the Weed Science Society of America (10th edition 2014). (NOT REQUIRED BUT VERY USEFUL- GOOD REFERENCE).

https://wssa.memberclicks.net/index.php?option=com_mcform&view=ngforms&id=24090#/

Assessments and Grading:

There will be a total of 1500 points for the course. There will be 12 quizzes on the lecture material and each quiz will be worth 100 points (100 x 12 = 1200 points for quizzes). These will be on the canvas site and will be open over a 6-7 day period (Monday through Sunday) – quiz length will be 45 minutes. See last page for quiz schedule. There will be an additional 300 points for discussion posts and symptomology pictures that you will gather during the course. Details are posted on the canvas site under assignments section.

Course Grading Scale:

Information on current UF grading policies for assigning grade points This may be achieved by including a link to the web page:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

The following grading scale will be used in this class.

Point range (%)	Letter Grade
93.0 – 100	A
90.0 – 92.9	A-
87.0 – 89.9	B+
83.0 – 86.9	B
80.0 – 82.9	B-
77.0 – 79.9	C+
73.0 – 76.9	C
70.0 – 72.9	C-
67.0 – 69.9	D+
63.0 – 66.9	D
60.0 – 62.9	D-
< 60	E

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/>. 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/>.

Student Disabilities: “Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) 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-honorcode/>) 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.

Cell Phone, Laptop, etc. Policy:

Please restrict the use of these devices for classwork unless taking notes. Taking pictures of slides is strictly forbidden and considered an infringement of copyright.

UF Counseling Services and Student Resources:

Students experiencing crises or personal problems that interfere with their general wellbeing 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. For Health and Wellness the following are available:

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/>, 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 - <http://www.police.ufl.edu/>
392-1111 (or 9-1-1 for emergencies).

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>.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <https://career.ufl.edu/>

Library Support, <http://cms.uflib.ufl.edu/ask>. 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/>

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. <http://writing.ufl.edu/writing-studio/>

Student Complaints On-Campus:

<https://sccr.dso.ufl.edu/policies/student-honorcode-student-conduct-code/>

On-Line Students Complaints:

<http://distance.ufl.edu/student-complaint-process/>

Software Use:

All faculty, staff and students of the University of Florida 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, pledge to hold ourselves and peers to the highest standards of honesty and integrity.

Class Outline:

<u>Module</u>	<u>Topic</u>	<u>Week</u>	<u>Quiz Due*</u>	<u>Points</u>	<u>Assignment Due</u>	<u>Points</u>
1	Review of Herbicide Basics	January 6-17	January 21	100	Discussion post – Due January 17	20
2	Herbicide Physiology	January 18-24	January 27	100	Discussion post – Due January 29	25
3	Herbicide History and Discovery	January 25-31	February 3	100	Discussion post - Due February 5	25
4	Environmental Fate of Herbicides	February 1–7	<i>No quiz</i>	---	Comments on Reading – Due Feb. 10	50
5	Photosynthesis Inhibition	February 8-14	February 17	100	Symptomology pictures – Due Feb. 14	20
6	Amino acid/Protein Inhibition	February 15-21	February 24	100	Symptomology pictures – Due Feb. 21	20
7	Cell Division/Growth Inhibition	February 22-28	March 2	100	Symptomology pictures – Due Feb. 28	20
-----	<i>SPRING BREAK</i>	<i>March 2-6</i>	<i>No quiz</i>	---	<i>No assignment</i>	---
8	Cell Membrane Disruption	March 7-13	March 16	100	Symptomology pictures – Due March 13	20
9	Fatty Acid Inhibition	March 14-20	March 23	100	Symptomology pictures – Due March 20	20
10	Pigment Synthesis Inhibition	March 21-27	March 30	100	Symptomology pictures – Due March 27	20
11	Growth Regulators	March 28 - April 3	April 6	100	Symptomology pictures – Due April 3	20
12	Miscellaneous Herbicides	April 4-10	April 13	100	Symptomology pictures – Due April 10	20
13	Surfactants, Adjuvants and Formulations	April 11-17	April 20	100	Symptomology pictures – Due April 17	20

* Quizzes will be open and available for the entire week during the section time with 30 to 45 minutes allowed to take the quiz.