PLANT/HERBICIDE INTERACTION
PLS 6655
ON-LINE VERSION
Department of Agronomy
University of Florida
Spring Semester, 2017

Instructor:	Greg MacDonald 2059 McCarty Hall Phone: 294-1594 E-mail: pineacre@ufl.edu

Credits:	3
Suggested Prerequisites:	Plant Physiology and Biochemistry Introduction to Weed Science Organic Chemistry
Course Description:	The course will address chemical and physiological aspects of herbicides. 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 Objectives:	To familiarize graduate students with basic and applied chemical and physiological aspects of herbicides. Students will also participate in activities to assess symptomology and injury from various herbicides.
Office Hours:	By appointment – call, email or txt my cell phone 352-262-8393
Class Schedule:	Canvas
Class Attendance:	online.
Textbook:	Herbicide Handbook of the Weed Science Society of America (10th edition 2014). https://psfebus.allenpress.com/wssa/Products/BookStore.aspx (NOT REQUIRED BUT VERY USEFUL- GOOD REFERENCE)

Grading System: There will be a total of 1260 points for the course. There will be 11 quizzes on the lecture material and each quiz will be worth 100 points (100 x 11 = 1100 points for quizzes. These will be on the canvas site and will be open over a 3 day period (Friday through Sunday) – quiz length will be 45 minutes. See next page for quiz schedule. There will be an additional 160 points for symptomology pictures that you will gather during the course. Details are posted on the canvas site under the assignments section.

A = 90-100% C = 70-75%
B+ = 86-89% D+ = 66-69%
B = 80-85% D = 60-65%
C+ = 76-79%

**** Academic Honesty**

As a result of completing the registration form at the University of Florida, every student has signed the following statements: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."

UF Counseling Services

Resources are available on-campus for students having personal problems or lacking clear career and academic goals which interfere with their academic performance. These resources include:

1. University Counseling Center, 301 Peabody Hall, 392-1575. Personal and career counseling.
2. Student Mental Health, Student Health Care Center, 392-1171. Personal counseling.
3. Sexual Assault Recovery Services, Student Health Care Center, 392-1171. Sexual assault counseling.
4. Career Resource Center, Reitz Union, 291-1601. Career development assistance and counseling.

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.

Course Outline: Powerpoint Lectures that detail several aspects of herbicides with a primary focus on mode of action. 16 total lectures in 11 separate modules.

Herbicide mechanisms and topics:

Module 1 - Herbicide Physiology and Environmental Fate
Module 2 - Herbicide History and Discovery
Module 3 - Photosynthesis Inhibition
Module 4 - Amino acid/Protein Inhibition
- Acetolactate Synthase Inhibitors
- Glyphosate

Module 5 - Cell Division/Growth Inhibition
- Mitotic Inhibitors
- Cellulose Biosynthesis Inhibitors

Module 6 - Cell Membrane Disruption
- Electron Diverters – Bipyridilliums
- Protox (PPO) Inhibitors
- Glufosinate

Module 7- Fatty Acid Inhibition
- Very Long Chain Fatty Acid Syn. Inhibition
- Acetyl CoA Carboxylase Inhibition

Module 8 - Pigment Synthesis Inhibition
Module 9 - Growth Regulators
Module 10 - Miscellaneous Herbicides
Module 11 - Surfactants, Adjuvants and Formulations

Quiz Schedule:

Module #	Quiz Dates
1	January 27-29
2	February 3-5
3	February 10-12
4	February 17-19
5	February 24-26
6	March 3-5
7	March 17-19
8	March 24-26
9	March 31 – April 2
10	April 7-9
11	April 14-16