PRINCIPLES OF WEED SCIENCE - PLS 4601c
INTEGRATED WEED MANAGEMENT – PLS 5632c
Department of Agronomy
University of Florida
Fall Semester, 2014

Instructor: Greg MacDonald
2059 McCarty Hall, Phone: 352-294-1594
E-Mail: pineacre@ufl.edu

Web Site: none

Credits: 3

Prerequisites: None

Course Description: An introduction to the principles of weed science. Lecture topics will include: weed biology and ecology, an introduction to weed management techniques and methodologies, factors affecting weed control, and environmental issues (emphasis on chemical weed control) associated with weed management. Topics covered in the laboratory: weed identification, crop/weed competition, application techniques including effective herbicide use and current weed control practices.

Course Objective: To provide students with an appreciation and better understanding of the discipline of Weed Science.

Office Hours: Tuesday and Thursdays - 9:30 am to noon, or by appointment

Class Schedule: 8:30 am - 9:20 am, Tuesday and Thursday
Room 086 McCarty Hall B

Laboratory: Teaching Assistant – TBD
Tuesday: 3:00 p.m. - 4:55 p.m.
Weed Science shop (Building 258)

Class Attendance: Lecture: Attendance is not mandatory but students will be responsible for all information presented.
Lab: Laboratory attendance is mandatory - be prompt.

Grading System: In class quizzes - 6 total, one drop (15%), 2 exams (35%), final exam (20%), laboratory (30%). Exam dates are listed in class syllabus but subject to change. Exams are not cumulative, but information gained from previous sections will be needed to full answer questions on subsequent exams.

A = 93-100%  C = 75-78%
B+ = 87-90%  D+ = 67-70%
B = 83-86%  D = 64-66%
C+ = 77-80%  F = <63%

Students attaining the following percentages are guaranteed at least these grades. Actual scale will often be lower at the end of the semester.

** 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.

**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**

**Introduction to Weed Science**
- impacts, definition

**Weedy Plant Characteristics**
- classification, survival strategies

**Lecture Date(s)**

**Quiz # 1 - September 11**

- Weed Biology
  - weed seed biology
  - vegetative reproduction

- Weed Crop Competition/Interference
  - definition

**Quiz #2 – September 23**

- Weed Crop Competition/Interference
  - factors affecting, mechanisms

- Allelopathy, Parasitism

**Test # 1 - September 30**

- Introduction to Weed Management
  - definition, overview of methods

- Review Test #1
  - Weed Management Strategies (thru biological)

**Quiz # 3 - October 9**

- Continue Weed Management Strategies
  - mechanical weed management

**Quiz # 4 – October 16**

- Herbicides (chemical weed management)
  - economics, pesticide laws
  - herbicide toxicology, environmental fate
  - herbicide application methods
  - herbicide plant interactions

**Test # 2 – November 4**
Herbicide Classification, Mode-of-Action  Nov. 6

photosynthetic inhibitors  Nov. 13

cell membrane disruptors  Nov. 18

**Quiz # 5 – November 20**

cell division/growth inhibitors  Nov. 20, 25

amino acid/protein synthesis inhibitors  Dec. 2

**Quiz # 6 – December 4**

pigment synthesis inhibitors and growth regulation  Dec. 4

Overview of weed management techniques, review  Dec. 4

**Test # 3 – December 9 (in class last day)**
LABORATORY SYLLABUS
Principles of Weed Science - PLS 4601
Fall 2014

Instructor: Greg MacDonald

Time: Tuesday afternoons from 3:00 to 5:00 PM

Place: All labs will begin in Building 258 (Weed Science Shop) unless otherwise directed.

Office Hours: Should you need any help with lab material please feel free to email, call, or stop by my office.

Weed ID Book: Students will be required to purchase a blank book to be used for seed and seedling identification and as a quiz study aid. More information will be provided during the first lab session. Books must be turned in by September 9, 2014 (see lab schedule).

Quizzes: There will be weekly quizzes on plant ID, calibration, safety, herbicide symptomology, and all other material covered in lab the week before. Quizzes will be given at the beginning of each lab. Students will be responsible for the common (correctly spelled) and scientific name (credit will be given only to recognizable names) of the plant species covered (for the identification portion of the lab).

Midterm: A lab midterm will be given after all of the plant ID labs have been completed.

Final: A lab final will be given at the last lab of the semester. All material not covered on the midterm will be included on the lab final.

Attendance: Attendance for lab is mandatory. Absences will be excused if a doctor’s note is provided.

Grading: The laboratory will account for 30% of the course grade and will be assessed as follows:
Seedling notebook - 15%
Homework assignments - 20%
Quizzes - 25%
Lab midterm - 20%
Lab final exam - 20%

Late homework policy: Homework assignments will be accepted late for up to one week following the due date. 20 points will be deducted from your grade if the assignment is turned in during this period.
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<tr>
<th>DATE</th>
<th>LAB</th>
<th>TOPIC</th>
<th>ASSIGNMENT</th>
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<tbody>
<tr>
<td>August 26</td>
<td>1</td>
<td>No Lab</td>
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<tr>
<td>September 2</td>
<td>2</td>
<td>Weed ID Techniques</td>
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<td>September 9</td>
<td>3</td>
<td>Weed ID: Agronomic and pasture weeds</td>
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<td>September 16</td>
<td>4</td>
<td>Seedling Weeds - Notebook</td>
<td>Quiz—Agronomic and pasture</td>
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<td>September 23</td>
<td>5</td>
<td>Weed ID: Turf weeds</td>
<td>Seedling notebooks due</td>
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<td>September 30</td>
<td>6</td>
<td>Weed ID: Aquatic and invasive weeds</td>
<td>Quiz—Turf</td>
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<td>October 7</td>
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<td>LAB MIDTERM</td>
<td>Weed ID</td>
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<td>October 14</td>
<td>7</td>
<td>Weed competition</td>
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<td>October 21</td>
<td>8</td>
<td>Herbicide formulations and Calibration—Part 1</td>
<td>Competition homework due</td>
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<td>October 28</td>
<td>9</td>
<td>Herbicide application equipment and technology and Calibration Part 2</td>
<td>Calibration homework 1 due</td>
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<td>November 4</td>
<td>10</td>
<td>Pesticide safety Surfactants and Adjuvants</td>
<td>Quiz—Calibration Calibration homework 2 due</td>
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<td>November 11</td>
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<td>No Lab – Veterans Holiday</td>
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<td>November 18</td>
<td>11</td>
<td>Herbicide symptomology</td>
<td>Quiz—Calibration</td>
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<td>November 25</td>
<td>12</td>
<td>Herbicide Fate in Environment</td>
<td>Quiz - Symptomology</td>
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<td>December 2</td>
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<td>LAB FINAL – everything since midterm, no plant ID</td>
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<td>December 9</td>
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