PSE 203 — Weed Biology & Identification

Fall 2016, 3 Credits
Sect. 0001 (10075) Tuesday, Thursday, 9:30-10:45 pm
Location: Roger Clapp Greenhouse teaching lab

Instructor:

Eric Gallandt
205 Roger Clapp Greenhouse; office hours: by appt.
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Teaching Assistant:

Margaret McCollough
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Course Description

This course aims to provide students with identification skills and knowledge of the basic biology of weedy plants common to agricultural, horticultural, turf, and roadside environments.

PSE 203 meets twice per week. Because we will emphasize examination of species in the field, the course will have an abbreviated schedule in an attempt to cover all species before temperatures are consistently below freezing. The class period will be devoted to the observation and study of specimens in the greenhouse and field with some lecture time to introduce new species and discuss their biology.

Learning Outcomes

- Identify approximately eighty weed species, at various stages of maturity, by common and scientific name.
- Describe the plant family, life cycle, habitat and key weedy or important characteristics of each species.
- Use print, online and herbarium resources to assist in weed identification.

Text/Materials

Uva, R. H., J. C. Neal, et al. (1997). Weeds of the Northeast. Ithaca, NY, Cornell University Press.

Small field notebook and hand lens.

Mini-plant press (provided), paper, glue, etc., for preparing samples of specimens.

Schedule, 2016

Week	Dates	Lab	Quizzes and Assignments
1	8/30	Introduction to Weed Biology & Identification	*Practice Quiz*
	9/1	Recognition of Weed Families	Quiz #1
2	9/6	Resources for ID	Quiz #2
	9/8	Turf Weeds	Quiz #3
3	9/13	Weeds of Perennial Gardens	Quiz #4
	9/15	Weeds of Field Crops (***Off Campus***; Rogers Farm)	Quiz #5
4	9/20	Weeds of Vegetable Crops (***Off Campus***; Rogers Farm)	Quiz #6
	9/22	Pasture Weeds (***Off Campus***; Witter Farm)	Quiz #7
5	9/27	Weeds of Waste Areas and Unmanaged Disturbed Sites	Quiz #8
	9/29	Weeds of Railroad Rights-of-Way (***Off Campus***; Old Town)	Quiz #9
6	10/4	Perennial Invasive Species: *Brad Libby*	Quiz #10
	10/6	Weeds of Wetlands and Riparian Areas	Quiz #11
7	10/11	***Fall Break, no class***	***No quiz***
	10/13	Weed Seed Identification	Quiz #12
8	10/18	Weed Seedling Identification	Quiz #13
	10/20	Review: Weed Jeopardy	Quiz #14
9	10/25	Practice Weed ID Exam	*Practice Weed ID Exam*
	10/27	Weed ID Exam—Field Specimens	Weed ID Exam
10	11/1	Student Presentations of Weed Biographies	
	11/3	Student Presentations of Weed Biographies	

Policies

Course Schedule Disclaimer (Disruption Clause)

In the event of an extended disruption of normal classroom activities, the format for this course may be modified to enable its completion within its programmed time frame. In that event, you will be provided an addendum to the syllabus that will supersede this version.

Academic honesty statement

Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University.

Students with disabilities statement

If you have a disability for which you may be requesting an accommodation, please contact Disabilities Services, 121 East Annex, 581-2319, as early as possible in the term.

Sexual Discrimination Reporting

The University of Maine is committed to making campus a safe place for students. Because of this commitment, if you tell a teacher about an experience of **sexual assault, sexual harassment, stalking, relationship abuse (dating violence and domestic violence), sexual misconduct or any form of gender discrimination** involving members of the campus, **your teacher is required to report** this information to the campus Office of Sexual Assault & Violence Prevention or the Office of Equal Opportunity.

If you want to talk in confidence to someone about an experience of sexual discrimination, please contact these resources:

For *confidential resources on campus*: Counseling Center: 207-581-1392 or Cutler Health Center: at 207-581-4000.
For *confidential resources off campus*: **Rape Response Services:** 1-800-310-0000 or **Spruce Run**: 1-800-863-9909.

Other resources: The resources listed below can offer support but may have to report the incident to others who can help:

For *support services on campus*: Office of Sexual Assault & Violence Prevention: 207-581-1406, Office of Community Standards: 207-581-1409, University of Maine Police: 207-581-4040 or 911. Or see the OSAVP website for a complete list of services at http://www.umaine.edu/osavp/

Grading

You will be responsible for sight identification of the species placed on the "Weed Identification List, Fall 2016." You should learn each plant's approved common name, scientific name, family, and life cycle; correct spelling is expected.

In-Class Quizzes (240 pts.)

There will be fourteen in-class quizzes, each worth 20 points (280 points total). The **lowest two quizzes will be dropped**, thus the total points possible equals 240. **Quizzes will be cumulative; i.e., Quiz #1 will cover species introduced in Lab 1; Quiz #2 will cover species from Lab 1 and Lab 2; etc.** You will be given a group of specimens and asked for the family, genus and species, or common name.

Specimens may include seeds, seedlings, or mature plants. We will emphasize use of live plant material or freshly collected field specimens. Notes, guides, etc., will not be permitted during these exams. Quizzes will only be available on the dates indicated; **no make-up quizzes**.

Weed ID Final Exam (160 pts.)

This will follow the same format at the weekly quizzes, but will include 60-70 specimens, with 80 blanks to fill in (common name, binomial, family, life cycle), each worth 2 points.

PSE 203 Weed Biographies (50 pts. each; 100 total). DUE: Noon, October 31.

Working individually, you are required to prepare two "Weed Biographies" that we will compile for distribution to the class. There will be a signup sheet in the Roger Clapp teaching lab to select species.

Weed Biographies are one page, and should be written with two goals in mind: (1) identification and; (2) listing of interesting and important weedy traits that could guide management. Biographies must include one peer-reviewed journal reference of the best paper or review article you find describing the species' biology.

During in-class presentations on November 1th and 3th, for each of your species, you will have time to present two slides to the class, the first featuring species description and identification, the second featuring traits and management (thus, four slides in total). Weed Biographies must be submitted in BlackBoard, and slides must be presented to Eric, on or before noon on October 31.

Weed Seedbank Project (100 pts.) DUE: 5:00pm, November 4.
Goal: Characterize germinable weed seedbank in a soil sample from a place of interest.
Site: You can choose any field site of interest to you; e.g., your vegetable or flower gardens, crop fields, pasture, forest edge, etc.

Hypothesize: What will emerge? i.e., your weed community, from your 'weed seedbank.'

Collect: With trowel, take a representative soil sample from your site of interest. You should

collect ten samples, each with a surface area of 5 cm by 5 cm, and each to a depth of 10 cm. Alternatively, we will supply you with tulip bulb planters which offer a constant area and easy to measure depth. Mix your ten samples and place in plastic bag for transport back to the Roger Clapp Greenhouse. Store in the refrigerator if not able to place in the greenhouse on the same day. Upon returning to the greenhouse, spread sample over a 1.5-inch layer of vermiculite. Water sample just enough to keep soil moist, but not too wet.

Observe: Visit your "seedbank" weekly and record date, species of weeds, and number of seedlings emerged. Once a seedling is identified and recorded, remove it from your flat so it is not counted again.

Report: In one page-typed, submitted online in BlackBoard, summarize the results of your "seedbank." Include your data table of greenhouse observations. All data must be presented in standard units (number of germinable seeds per square meter to 10 cm depth). You do not need to present data for each seedling identified. Rather, present species level data for the most abundant 3-5 species, and summarize others in general categories (e.g., broadleaf; grass). What species was most abundant? What was the least? How do your findings support or refute your hypothesis? What did you find most surprising?

Final Grades

Grade	Percent of Total Points Possible
A	95-100
A-	90-95
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	66-69
D	60-65