Field Botany

INSTRUCTOR: Dr. David Krayesky, Professor of Biology
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TEXTBOOK(S): ***Newcomb's Wildflower Guide***, by Lawrence Newcomb. 1977. Little, Brown & Co., Hachette Book Group. ISBN-978-0-316604-42-0

Fern Finder: A Guide to Native Ferns of Central and Northeastern United States and Eastern Canada, by Anne C. Hallowell and Barbara Hallowell, illustrated by Anne C. Hallowell. Second edition. ISBN-0-912550-24-4

Tree Finder, by May Theilgaard Watts. ISBN-978-0-912550-01-5

OPTIONAL - ***Wildflowers of Pennsylvania***, by Haywood, M.J. & Monk, P.T. 2001. Venture Graphics, Inc. ISBN: 0-9710614-0-8

OPTIONAL - ***A Peterson Field Guide to Wildflowers: Northeastern and North-central North America***, by Peterson, R.T. & McKenny, M. 1998. Mariner Books. ISBN: 978-0-395-91172-3

DESCRIPTION: A field class with a lecture component. The primary focus of the class is to enhance student understanding of the taxonomy and ecology of species that compose our flora in western Pennsylvania. Students will be introduced to approximately 300 species of western Pennsylvania flora. Organisms that will be covered include: Flowering plants (woody angiosperms and common wildflowers), Conifers, Ferns & Fern allies, Bryophytes, Lichens, and some representative Fungi and Macroalgae in our flora. Terminology associated with general plant/fungal/algal structure as well as life cycles of these aforementioned organisms will be described. Students will be introduced to both terrestrial and aquatic ecosystems and the habitats that select species require. Students will generate a personal herbarium (a plant collection) of the plant species they encounter, during the course.

OUTCOMES: **Upon the successful completion of the course students should be able to:**

- Learn to recognize the major plant and lichen groups
- Learn to recognize some of the common fungi and algae in our flora
- Learn how to identify unknown plant and lichen species of Western Pennsylvania using professional and amateur keys
- Learn how to preserve plants as herbarium specimens (and make a plant collection)
- Learn plant terminology and understand the life cycles of the major

groups of organisms in the botanical flora of western Pennsylvania

- Learn the basic plant/lichen/fungal structures and their functions.
- Identify habitats in which we find specific species of plants
- Students will be able to recognize many of vascular plant species in the summer flora of western Pennsylvania
- Students will be able to identify some of the common invasive species in western Pennsylvania that displace our native plants

GRADING: Plant identification quizzes, and a final exam(as a lecture + field) will account for 60% of your grade; your plant collection will account for the other 40%.

Note: You must be prepared to go outside for each class in order to collect plants or for lecture purposes. Hiking will be minimal, but wear old shoes/sneakers or hiking boots. We may go outside in the rain. You should carry a pocket knife with you, a small notebook, pen/pencil/marker, large plastic bag or plant press. Begin collecting newspapers, you will need them in order to press your plants.

I also expect that you will collect plants on your own time as well as during class time.

Plant collection: You will be required to hand in at the end of the session a collection of 25 herbarium specimens representing each of the major plant groups. These will be graded on quality of preservation, herbarium mounting technique including label information, and correct identification.

Places we visit to examine land plants in their local environment will include: Goddard State Park, McConnell's Mills State Park, Wolf Creek, Pymatuning State Park, Pine Swamp, Presque Isle State Park, Erie Bluffs State Park, Triangle Bog, Various areas within Slippery Rock and Grove City.

Your final collection should include the following:

5 Bryophytes (mosses and liverworts) & lichens
3 Pteridophytes (ferns and fern allies)
2 Conifers
15 Flowering plants

You may collect more than the required number of Bryophytes, Pteridophytes, Lycophytes, Lichens and Conifers and collect fewer Flowering plants.

Additional materials each student must provide:

1. Hand lens with at least 10x/15x magnification
2. Bottle of Elmer's White Glue
3. Newspapers for pressing and collecting plants
4. Plastic garbage bags for collecting plants
5. Permanent marking pen for labeling field collections
6. Cardboard as needed for plant presses