



Flora & Taxonomy (3100:342). Fall 2008
Lecture T TH 1:10-2:00, Lab Th 2-3:30, Room G01 ASEC.
 Instructor: Dr. Randy Mitchell, 177 ASEC. 972-5122,
 rjm2@uakron.edu; uakron.edu/biology/mitchell/flora
Office: W 2-3, T 2-3, or by appt.



Text: Simpson, M. G. 2006. Plant Systematics. Elsevier-Academic Press.
 Newcombe, L. 1977. Newcomb's Wildflower Guide. Little, Brown, & Co.

Optional books: Watts, M.T., & Watts, T. Tree Finder. Nature Study Guild
 Gleason, H. A. and A. Cronquist (1991). Manual of vascular plants of Northeastern United States and adjacent Canada. NY NY, New York Botanical Garden
 Elpel, T.J. 2004. Botany In A Day-The Patterns Method of Plant Identification. Thomas J. Elpel's Herbal Field Guide to Plant Families (5th Edition). Hop Press Montana.
 Spears, P. 2006. A tour of the flowering plants based on the classification system of the angiosperm phylogeny group. Missouri Botanic Garden Press.

"In these days when Molecular Biology is ... narrowing our vision by concentrating on the basic uniformity of organisms at the macromolecular level, the need for taxonomists to draw attention to the enormous diversity and variation of this earth's biota becomes more and more pressing." V.H. Heywood (1973). *Acta Bot. Acad. Sci. Hung.* 19:139-146 (quoted by T.F. Stuessy, 1990. *Plant Taxonomy*. Columbia University Press)

If I could remember the names of all these particles, I'd be a botanist. Enrico Fermi, Physicist.

TENTATIVE Schedule and readings

Week	Special dates	Topic	Reading
8/26		Introduction, Collecting	Chp 1 (skim), Chp 6 (skim), Chp 17
9/2		Reproductive terminology; Keys & Keying	Chp 6, Chp 9 (pg 364-389), Chp 15
9/9		Vegetative Terminology	Chp 9 (pg 347-364)
9/16		More Terminology	
9/23		Nomenclature / Classification	Chp 16
9/30	Exam Tues	Classification	
10/7		Phylogeny 1	Chp 2
10/14		Basal Angiosperms, Monocots- FOD	Chp 7
10/21		Monocots – FOD	Chp 7
10/28		Eudicots – FOD	Chp 8
11/4	Exam Tues	Eudicots- FOD	Chp 8
11/11		Eudicots – FOD	
11/18		Phylogeny –FOD, ESEM	Chp 2
11/25	T-day 27 th	Species	
12/2		Ecology	
12/12	2-3:55	Final- Collection due, interview (Friday)	

This class explores the identification and biology of flowering plants. By the end of the semester you should be able to demonstrate that you:

- ✓ Understand the basic principles of systematics
- ✓ Understand and can use plant morphology terminology
- ✓ Can use taxonomic keys
- ✓ Can properly prepare a plant collection
- ✓ Recognize some important plant families by sight
- ✓ Recognize some important genera of plants by sight
- ✓ Develop an appreciation of flowering plants
- ✓ Can discuss the general patterns of angiosperm evolution
- ✓ Recognize some of Ohio's common native plants



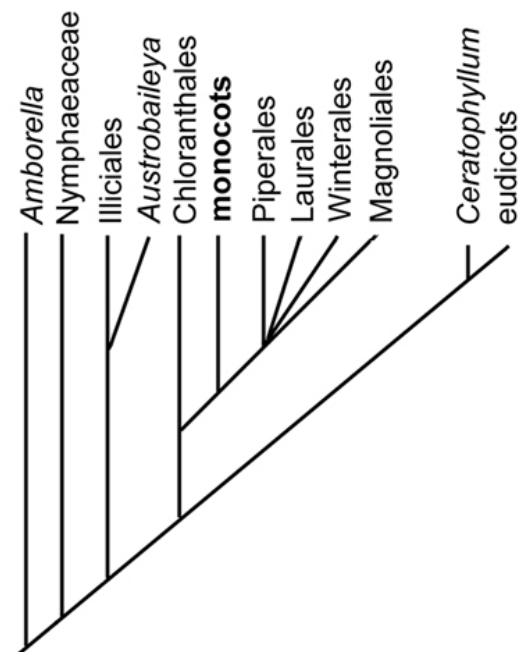
Prerequisite: Biology 112 or consent of instructor

Grading:

Item	% of grade
Quizzes, lab activities, field trips, 'family of the day.' There will be short quizzes about once a week, mostly covering terminology and other factual memorization topics. For the two or so 'family of the day' projects you will generate a short writeup and an in-class presentation. There may be other activities	40%
Exams. There are currently three regular exams scheduled. The two in-class exams will test your understanding and command of the material using short answer, matching, sketches, and other written questions. The final will be an interview based on your collection during finals week	35%
Collection and Field Notes. You will collect, press, curate, identify and correctly label plant specimens. During finals week you will turn in your collection along with your field notebook for evaluation, and other supplemental materials. There will also be an interview_(see 'exams' above) based on your collection.	15%
Attendance, participation.	10%

Lecture: Lectures are intended to supplement and expand on the text, explaining difficult or especially important parts. You'll probably get the most out of lecture if you skim the text before class; then read it more carefully after lecture. Although I will emphasize concepts throughout the class, this course demands a certain level of memorization. Your mastery of the necessary terminology and functional morphology will be tested during frequent (once every week or two), small quizzes.

Lab: Practical experience is an important part of this class. You will be provided with some of the necessary equipment (plant press, razorblades, teasing needles, , etc.). Please bring your text to class, since many of the diagrams will be useful.



You may find it helpful to find some supplementary equipment, **especially a good hand lens ('loaners' are available from the instructor)** . You should keep a lab/field notebook (loose-leaf or bound). This should be a working document, not "gussied up" for grading. Nonetheless it should be neat and legible, with properly labeled drawings and useful notes. More information on this will be available as the class progresses.



Field trips: There will be two sorts of field trips: 1) In-class: During the first month or two of class, we will try to go to the field most labs, so you can observe and collect plants in their natural habitat. *Be prepared* for field conditions! Bring good walking shoes, a hand lens, a field notebook, a hat, and warm/water repellent clothing. Bring a safety pin to use as a probe! A pair of hand-pruners, trowel, and other tools may be useful when making your collection – we will discuss this later. The in-class field trips may occasionally require all the time allotted to both lecture and lab, or even more. You will be warned when such trips are planned. For this reason, please do not be late for class! 2) Weekend/ out-of-class-time: I hope to offer two or more field trips beyond those during class time. You must attend at least one of them, or make arrangements with me. More details will be forthcoming.

Participation and Attendance are important in this class. Please be on time, and be prepared to stay for the entire class and lab period. If circumstances prevent this, please let me know ahead of time, so that you will not be overly penalized. Quizzes will often occur at the beginning of class time, so being late has a natural penalty. Lecture and lab are not separate in this class, so on field trip days we will often leave right at the start of class. Field trips and Labs cannot be made up because they are experiences not just a list of information.



Optional supplemental references:

Keys

- Braun, E.L. The Woody Plants of Ohio. OSU Press. *Keys (winter or summer, and with little or no need for flowering material), distribution maps, and species descriptions.*
- Gleason, H. A. and A. Cronquist (1991). Manual of vascular plants of Northeastern United States and adjacent Canada. NY NY, New York Botanical Garden. *The authoritative reference for our region. Many pages, small print, thorough. This is the main book we'll use for keying out specimens. I HIGHLY ENCOURAGE you to get a copy*
- Voss, E.G. 1972. Michigan Flora. Cranbrook Press, Michigan. Keys, maps, drawings, and information. *Applies pretty well to Ohio as well. Three volume set, only \$20/volume.*
- Watts, MT, T Watts. Winter Tree Finder. Nature Study Guild. *Tiny but complete picture key to trees without leaves.*
- Weishaupt, C.G. 1971. Vascular Plants of Ohio. Kendall Hunt. *Keys to most Ohio species. The taxonomy is out of date, but good place to start if you have flowering material.*

General Information

- Bell, A.D. 1990. Plant Form. Oxford Press. *Slim volume presents handy tips and stories about plant morphology*
- Silvertown, Jonathan. 2005. Demons in Eden: The Paradox of Plant Diversity. University of Chicago Press. *Engaging, readable, and brief discussion of what maintains diversity in plant communities. Brings the subject alive.*
- Spears, P. 2006. A tour of the flowering plants based on the classification system of the angiosperm phylogeny group. Missouri Botanic Garden Press. *Non-technical guide to the orders and families as specified by the most recent classification. Great photos, useful summaries.*

"Botany I rank with the most valuable sciences, whether we consider its subjects as furnishing the principal sustenance of life to man and beast, delicious varieties for our tables, refreshments from our orchards, the adornments of our flower borders, shade and perfume of our groves, materials for our buildings, or medicaments for our bodies."
Thomas Jefferson, as quoted on the internet

Policy on Academic Dishonesty

Diana Hacker writes, "To borrow another writer's language or ideas without proper acknowledgment is a form of dishonesty known as plagiarism" (1997. *A Pocket Style Manual*, 2nd Edition. Bedford Books, Boston, p. 91). The University of Akron regards **plagiarism** as a grave academic offense, and it will not be tolerated. You will be guilty of committing plagiarism if you use, without proper acknowledgment, paragraphs, single sentences, clauses, or ideas of others, regardless of the source (scientific publications, books, pamphlets, newspapers or newsletters, commercial "term paper" services, electronic media [such as **information on the Internet**, CD-ROM's, commercial or non-commercial floppy disks, etc.], papers previous students have submitted for this or other courses, and the like). If you have **any** questions about what constitutes plagiarism, be sure to inquire before submitting your work!

If you are found to have committed plagiarism or are caught cheating on any graded portion of this class, you will be reprimanded to the full extent outlined in the student handbook. This includes one of the following actions: reduction of course grade, disciplinary probation, suspension, or outright dismissal from the University.

Images from: <http://www.ionxchange.com>, www.botgard.ucla.edu, <http://www.naturesherbal.com>, text

