

FIELD BOTANY
 BIO 235 (SNT, LAB, INQ)
 SPRING 2012
 DR. ELOISE CARTER

***Proposed topics for discussion and lab/field**

		LECTURE/DISCUSSION	LAB/FIELD
Jan.	19	What's Field Botany? Can you tell the oaks from the hickories?	
	24	Twig Revelations B.Y.O.T. (bring your own twig)	Trees in Winter I: (Bring <i>Native Trees of the Southeast</i>)
	26	Classification & Angiosperm Phylogeny Group III	
	31	Plant Communities of the Southeast	Piedmont Forests & Winter Trees II: Hearn Nature Trail Forest and Oxhouse
Feb.	2	Ethnobotany: Amazing Uses of Plants	
	7	Medicinal Plants of Appalachians <i>Medicinal Plant Project: introduction, families & presentation dates</i>	Bottomland Hardwood Forest: Gum Creek
	9	Workshop: Searching Botanical Information (meet in P206)	
	14	Atlanta Botanical Garden <i>Orchid Daze</i>	Depart at 11:30 a.m.
	16	TREE QUIZ – Be on time	
	21	Reading the Landscape <i>Medicinal Plant Project: Outline and Annotated Bibliography Due</i>	Stone Mountain Creek – Mesic Forest (will depart early)
	23	Ecoregions of Georgia: The Piedmont	
	28	Sex Advice from the Plant Kingdom	What is a flower? What is a species? BYOF (Bring flowers & "Radford")
Mar.	1	"Help, I can't find a persimmon!"	
	6	Early Spring flowers; collecting and identifying	Meet in Lab at 11:30a.m. Bring Radford
	8	***WINTER TREE EXAM***	Field Notebooks due in class. Meet in Lab
	12-18	***SPRING BREAK***	
	20	Major Plant Families	Oxford's "wild gardens" of field and lawn
	22	Presentations (3): Plant Families	
	27	Presentations (4): Plant Families	Forest Restoration
	29	Presentations (3): Plant Families	

April	3	Wesley Woods: Old Growth Forests of Emory University	Depart at 11:30 a.m. (Bring lunches!)
	5	"Can you help me?" - Bring Radford	
	10	What are endemic and rare species?	Granite Outcrops (Bring water!)
	11	<i>Dr. Alison Foster, Oxford University Botanic Gardens, Pierce Visiting Scholar, Lecture time and place TBA</i>	
	12	Carnivorous Plant Families & Ecology	(Dr. Foster Evening Lecture @ ABG)
	14	***Weekend Field Trip**Carnivorous Bog & Coastal Plain Communities Depart 7 am. Required all day (night) field trip!	
	17	What is a weed?	The Urban Landscape
	19	Plant Identification - Bring Radford	
	24	Biodiversity & Wetlands	Lake Varner & Alcovy River Swamp
	26	Final Preparations	
May	1	Final Laboratory Exam: Plant Identification with Radford 11:30-4	
	2	***Reading Day*** Which trees haven't you seen? One last walk!	

Tuesday, May 8th; 2-5 pm **FINAL TREE EXAM Field notebooks due**

Texts: Kirkman, L.K., C.L. Brown and D. J. Leopold. 2007, *Native Trees of the Southeast*. Timber. Includes native trees in winter and with leaves. Non-native trees will require use of lab reference books. **(Required)**

Radford, A.E., H.E. Ahles and C.R. Bell. 1968. *Manual of the Vascular Flora of the Carolinas*. University of North Carolina Press. The most complete flora of the Southeast. Others will be available in lab. **(Required)**

Harrar, E.S. and J.G. Harrar. 1962. *Guide to Southern Trees*. Dover Press. This is an excellent guide to trees, but does not include shrubs. *This book will be provided in the lab as well as several others.*

Harris, J.G. and M. W. Harris. 2001. *Plant Identification Terminology: An Illustrated Glossary*. Spring Lake Publishing. Words and pictures to assist in learning the language of botany. *Several copies are provided in lab* – will be your best friend.

"One impulse from a vernal wood
May teach you more of man,
of moral evil and of good,
Than all the sages can."

from:
Expostulation and Reply
Walt Whitman

A FIELD GUIDE TO FIELD BOTANY

CLASS OBJECTIVES:

Field Botany is a laboratory/field course in the Natural Sciences. This course will engage you in the Inquiry Process in which you will develop the skills to pursue questions about biological diversity, ecology and botany. You will be engaged in the process of science, but you may be surprised to find that you will not be engaging in laboratory experiments. You will be developing questions (what species is that?), testing hypotheses (a devil's walking stick), and using your knowledge, keen observations skills, and analytical methods to pursue these questions. You will also be learning to read and think critically. The "primary text" for this course is the natural flora of the Piedmont of Georgia. In addition you will read and analyze taxonomic texts as you develop the skills of identification and the knowledge of the underlying taxonomy and classification. As you navigate through the world of plants you will:

- develop the observation and critical investigative skills to be keen observers of the natural world, *forever*;
- explore the questions, "what is a species and how are species similar and different;"
- investigate in the field and laboratory the flora and ecology of southeastern plant communities;
- discuss issues of biological diversity, land use, and conservation of endemic species;
- identify in the field 50+ woody plants in the winter condition;
- identify in the field 100+ woody plants in the spring;
- use a taxonomic key to identify local flora;
- develop an understanding of plant families, their characteristics, and current issues in classification;
- investigate the medicinal uses of plants.

CLASS PREPARATION: Students will not have readings from a textbook, but should expect to read for background information and class/lab preparation. Students should be ready to ask questions and to participate fully in class and laboratory discussions and activities. Students are responsible for *all* materials and information in lab, field, and lecture. Classroom experiences provide the fundamentals essential to become successful botanists. References and resources are provided in the laboratory. Inquire and be resourceful!

WOODY PLANTS: Students will be able to identify approximately 50+ woody plants in the winter condition before Spring Break and around 100 woody plants by the end of the semester. *Students are expected to take the initiative and responsibility for locating and identifying woody plants. The instructor is ONLY one of many resources available to students.*

FIELD BOOKS: Students will keep a field book for field observations, notes, and REFLECTIONS. The purpose of a field book is to promote, reward, and evaluate independent fieldwork, as well as excellent field observation and identification skills. Field books may be purchased from your instructor.

Each entry in your Field Book **must include:**

- **date, location, observers**
- **general description (physical features, disturbance, community type)**
- **notes – what you want to remember – species, characteristics, how to identify**
- **REFLECTIONS - required paragraphs that (1) summarize experiences and reveals thought and creativity; and (2) reveal the process that you are using and find useful in field investigations (how do you know what you know?)**

Field books will be collected and graded twice during the semester. *All notes must be made in **pencil** in the field.*

STUDENT PAPERS AND PRESENTATIONS: Each student will investigate a plant family and examples of species in that family that have medicinal properties. Each student will prepare a paper (approximately 6-8 pages) on the ethnobotany of the taxa. The papers are due on the Tuesday following the presentation. Students will select a portion of their research to present in a 15 minute presentation in class on March 22, 27 and 29. Look for an information sheet in the second week of class.

FIELD EQUIPMENT: Every student will need a **hand lens** for class and lab. These are available for purchase or loan. A pocketknife is not required, however I strongly recommend you purchase or borrow one for the semester. Everyone should bring a personal **water bottle** for lab days. *Students should always pick up a collecting bag and rubber band before going in the field.*

WEEKEND FIELD TRIP: All students must attend the weekend field trip and should **make plans in advance**. The cost of the trip varies, but usually costs around \$20 or less.

HONOR CODE: All examinations and all work for credit in this course come under the regulations of the Honor Code. Your signature on your work attests to your upholding the Honor Code. Please read the information on **plagiarism** on the Library web page and always ask if you have any questions about assignments. Note that writing assignments will be submitted to **SafeAssign on Blackboard**.

OFFICE HOURS: Office: P107, 4-8343; Monday 10:30 – 11:30 and Wednesday 11 – 12 noon. I am available to help at any time. For an appointment see me in class or come by my office.

ABSENCES: Don't be absent, you will miss too much! However, if emergencies or illness prevent attendance, please notify the instructor immediately. The Biology Department policy on absences is attached. Unexcused absences or a failure to follow the procedures outlined in that handout **will result in a significant reduction in your grade**. Any questions about absences should be asked immediately.

COLLEGE-WIDE ASSESSMENT: Student work submitted as part of this course may be reviewed by Oxford and Emory faculty/staff for the purposes of improving instruction and enhancing Emory education.

WAYS OF INQUIRY (INQ): Field Botany is designated as a “Ways of Inquiry” or INQ course. In INQ courses, students “understand and question the way knowledge is sought by actively learning and practicing the discipline’s approaches to inquiry” (INQ Vision Statement). In Field Botany, you will have many opportunities to engage in biological inquiry by asking questions, making comparisons, observing natural diversity and ecological systems, reading and writing critically, and working independently to seek knowledge.

EVALUATIONS: Students will be evaluated on medicinal plant family presentation and paper, field notebook, field exams on woody trees, weekly plant identifications, and a final laboratory identification of unknown flowering plants. Written examinations may be given in class. Class participation, contributions to laboratory and field work, and the development of field skills also will be considered. Think of your grade as having 3 components:

- 🌳 **TREES** – Quizzes, exams and other work on your winter and complete tree lists.
- 🌳 **FIELD WORK & WRITING** – Field book, plant family paper and presentation & other projects
- 🌳 **PLANT IDENTIFICATION** – Laboratory plant ID, weekly work, quizzes and exam

Proposed contributions to grade:

Tree identification 30%
Weekly identification of flora 20%
Exam - identification of flora 20%
Field Book 15%
Paper and Presentation 10%
Engagement 5%