Field Botany - BIO 235 (SNT, LAB, INQ)

Spring 2015

Professor: Dr. M. Eloise Brown Carter
Office: Pierce Hall #107 (porch on south door to Pierce)
Lecture Hours: Tuesday/Thursday; 11:50 a.m. – 1:30 p.m.
Lab Hours: Tuesday 1:40 – 4:40 p.m.

Phone: (770) 784-8343
Room: Pierce 101
Room: Pierce 117

Office Hours: Wednesday and Friday, 11:50-12:30. Students are encouraged to see Dr. Carter during class or lab to make appointments for other times that match our schedules.

Required 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.

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 books will be available in lab.

**Proposed Topics for Investigation in the Field, Lab, and Classroom

		LECTURE/INQUIRY	LAB/FIELD
Jan.	13	What's Field Botany? Can you tell the oaks from the hickories?	Trees in Winter I: Twig Revelations and Taxonomic Keys (Bring *Native Trees of the Southeast)*
	15	Diversity and Classification - (Bring *Native Trees of the Southeast)*	
	20	Piedmont Forest Systems	Piedmont Forests & Trees in Winter II: Hearn Nature Trail Forest and Oxhouse
	22	Major Plant Families & Introduction to Project	
	27	Ecoregions of Georgia	Bottomland Hardwood Forest: Gum Creek
	29	Ethnobotany: Amazing Uses of Plants	
Feb.	3	Medicinal Plants of Appalachians	Factory Shoals Forest on the Alcovy River
	5	Workshop: Searching Botanical Information (meet in P206)	
	10	Atlanta Botanical Garden *Orchid Daze*	*Depart at 11:30 a.m.*
	12	TREE QUIZ – Be on time	
	17	Reading the Landscape	Stone Mtn Creek – Mesic Forest –Depart Early
	19	Investigating Oaks and More..... *Ethnobotany Family Project: Part I: due in class*	

****Class and laboratory schedule is dependent of weather, arrival of spring, and opportunities!**

	24	Sex Advice from the Plant Kingdom	What is a flower? What is a species? BYOF (Bring flowers & "Radford")
	26	"Help, I can't find a persimmon!"	
Mar.	3	Early Spring flowers; Collecting and identifying	Meet in Lab at 11:30a.m. Bring Radford
	5	**WINTER TREE EXAM** Turn in Field Notebooks	Meet in Lab
	9-15	**SPRING BREAK**	
	17	Major Plant Families	Oxford's "wild gardens" of field and farm
	19	Presentations (3): Plant Families	
	24	Presentations (4): Plant Families	What is a weed? The Urban Landscape
	26	Presentations (4): Plant Families	
	31	Brender-Hitchiti Forest, Ocmulgee River *Ethnobotany Family Project: Part II due in class*	*Depart at 11:30 a.m.*
April	2	"Please, can you help me?" - Bring Radford	
	7	What are endemic and rare species?	Granite Outcrops (Bring water!)
	9	Plant Identification - Bring Radford	
	TBA	**Weekend Field Trip** Coastal Plain Communities**** **Details to follow! This trip is required.**	
	14	Biodiversity & Wetlands	Lake Varner & Alcovy River Swamp
	16	Major Plant Families – Review	
	21	**Final Laboratory Exam: Plant Identification with Radford 11:50 a.m.– 4:30 p.m.**	
	23	Final Preparations and Reflections	
	28	Reading Day Which trees haven't you seen? One last walk!	

May 4th; Monday 2 p.m. – 5 p.m. **FINAL TREE EXAM** Turn in Field Books

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. These 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. Optional Sunday afternoon walks.*

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: Students will select a plant family and several significant species with a focus on investigating the cultural uses (ethnobotany) of these plants. Each student will write a paper IN TWO PARTS on the ethnobotany of the family. Part I. is an introduction to the family and selected species and their uses (due on **February 20th** in class). Part II. focuses on evidence for the medicinal properties and uses of *additional* species in the family (due on the **Tuesday April 1st** in class). Students will select a portion of their research to present in a 15-minute presentation in class on March 20, 25 and 27. *Look for the ETHNOBOTANY PROJECT DESCRIPTION in the second week of class.*

FIELD EQUIPMENT: Every student will need a **hand lens** for class and lab and will be purchased in class. A pocketknife is not required, however I strongly recommend that 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.* Come to class prepared to go in the field every day; regardless of the weather – we go! As the English say, *"There's no inappropriate weather, just inappropriate clothing!"*

***REQUIRED* 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 there are expenses of about $25.

HONOR CODE: All examinations and all work for credit in this course are covered by 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**.

EXAM PROTOCOLS. Do not come to any exam (classroom, laboratory or field) with notecards or paper in your pockets or on your person. All cell phones are to be turned off and either in your bag in the front of the room or on the instructor's bench or office. **You may NOT have phones on your person.** Do not write notes, study material, abbreviations, or material that can be construed to be these on your body. Check for such notations and remove before the exam time. *These are considered to be a breach of the Honor Code.*

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.

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.

SUSTAINABILITY – LIFE IN BALANCE: This year many members of the Oxford College community will be exploring the theme of Sustainability: Life in Balance. In this course you will have the opportunity to connect your work in cell biology, energy transformation, and laboratory investigations to this theme.

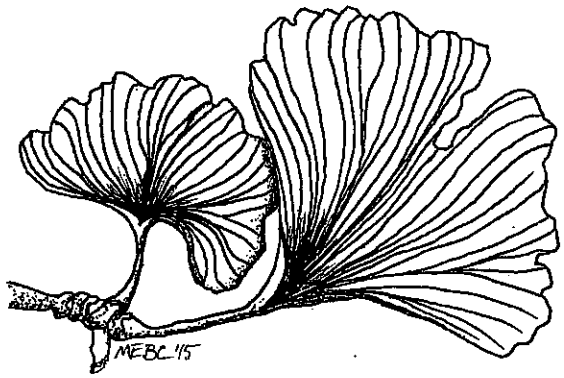
EVALUATIONS: Students will be evaluated on medicinal plant family presentation and paper, field notebook, field exams on woody trees, weekly plant identifications, and a final laboratory identification of unknown flowering plants. Written examinations may be given in class. Class participation, contributions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

Proposed contributions to grade:

Tree Identification 35%
- Winter Quiz 5%
- Winter Tree Exam 10%
- Final Tree Exam 20%

Plant Identification in the laboratory 35%
- Weekly keying and quizzes 20%
- Final Exam 15%

Field Work, Writing, and Engagement 30%
- Field Books 15%
- Project, Research, Presentation & Paper 15%



CLASSROOM AND LABORATORY GUIDELINES

Department of Biology

1. Eating and drinking are not allowed in either classrooms or laboratories. Therefore, do not bring food items and beverages to class or laboratory. The use of tobacco in any form is forbidden in Pierce Hall.

2. Students are expected to wear appropriate attire in classrooms and laboratories. Students must wear closed toed shoes in the laboratory.

3. Students should thoroughly wash their hands before leaving the laboratory.

4. Students must be safety conscious at all times but especially in the laboratories. Special procedures will be reviewed during laboratory sessions as needed.

5. All students are requested to help with housekeeping in the classroom and laboratory.

6. Materials may not be taken out of the laboratories. This includes microscopes, microscopic slides, demonstration notes and materials, charts, and all other items which are to be found in the laboratory.

7. Students may not photograph laboratory materials.

8. Violation of any regulation notes in Sections 6 and 7 above will be treated as a breach of academic integrity. Therefore, such violations will be immediately reported to the Honor Council.

Absence Policy -- Biology Department, Oxford College

All students are expected to attend all lecture and laboratory sessions. However, emergencies may arise which will necessitate absences from class. Students are allowed 4 cuts in lecture and **NO CUTS** in lab. Students may only miss lab without penalty in cases of illness, family emergency or a school-sponsored event **which is cleared with the professor in advance**. Students are responsible for all material which is covered in laboratory and lecture. When possible, students will be allowed to "make-up" laboratory material missed due to an excused absence; however, because of the nature of the laboratory material, actual "make-up" of missed activities is usually impossible.

PENALTIES

Students who exceed the "4-cut" limit in lecture, for whatever reason, or have an unacceptable absence from laboratory will have their final grade reduced 5 points per absence. Students who miss 2 labs without acceptable reasons will fail the course (see below).

LECTURE ABSENCES

THERE ARE NO EXCUSED ABSENCES FOR LECTURE. Each student may be absent four (4) times without penalty. These four (4) cuts may be used for any reason: illness, studying, travel, family emergency, etc. However, ANY additional cuts will result in grade reduction. **USE YOUR CUTS JUDICIOUSLY**, e.g., for sick leave only.

ACCEPTABLE LABORATORY ABSENCES

Although no discretionary absences, ie, "cuts," are allowed regarding laboratory exercises, on rare occasions, illness, family emergencies or certain school sponsored events may make it necessary for a student to miss a laboratory session. The instructor MUST be notified prior to the day of the absence in all but the most extreme emergencies.
In all cases, the final decision regarding whether or not an absence is acceptable will be made by the instructor.
AN UNACCEPTABLE ABSENCE FROM LABORATORY RESULTS IN A FIVE-POINT REDUCTION IN THE FINAL GRADE. TWO UNACCEPTABLE LABORATORY ABSENCES RESULT IN FAILURE OF THE COURSE.

MISSED TESTS

Ordinarily, tests cannot be made up; however, this is up to the instructor. If a student misses a test, and the absence is acceptable, the missed test will not count either for or against the student. If the absence is not excused, the grade will be a zero. Students are cautioned that any excuse for missing an exam will come under sever scrutiny by the instructor. **THE INSTRUCTOR MUST BE NOTIFIED PRIOR TO THE TIME OF THE EXAM, AND THE INSTRUCTOR MAKES THE FINAL DECISION REGARDING WHETHER OR NOT AN ABSENCE IS ACCEPTABLE.**

Laboratory tests which are missed for a reason that is excused MUST be made up. The instructor must be notified prior to the time of the test.

RELIGIOUS HOLIDAYS

Students must notify the instructor one week in advance if they intend to be absent for a religious holiday.

TARDINESS

Being late to class is rude and distracting. Continued tardiness by any student will result in the assignment of absences and ultimately a reduction in the student's grade. Three tardies equal an absence. The tardy student is responsible for notifying the instructor that s/he entered the classroom late and therefore was not absent. The instructor reserves the option of excluding a person from further classroom or laboratory participation if the student is continuously tardy.

Falsification of information regarding absences from class or laboratory will be considered a breach of academic integrity.