

Dendrology FO-2113

Instructor: David L. Evans

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Office hours (353 TH) 10-11 M-F or by appmt.

Time/Place: Lecture: 11 – 11:50 Tues/Thurs

Rm A208 TH Annex

Labs: 1-5:00, Rm 118 TH

Lab Assistants: Tues – Clay Mangum (348/224), Wed – Mark Garrigues (350), Thu – Laura Hobbs (350)

Prerequisite: BIO 1134 (Biology I) and BIO 1144 (Biology II) or equivalents

YOU MUST CHECK WITH THE INSTRUCTOR IF YOU DO NOT SATISFY THE PREREQUISITES OR YOU WILL BE DROPPED FROM THE COURSE.

Course Description:

Dendrology, literally defined, is the study of trees. More specifically, it deals with the classification (systematics), morphology, phenology, ecology, geographic range, and natural history of trees. This course is designed to provide you with a thorough understanding of the characteristics and importance of trees, shrubs and woody vines of the southeastern US as well as commercially or ecologically important species from other parts of North America. Many shrubs and woody vines we take up in lab will not be covered in lecture and are not in the textbook. **This is the starting point for forest resource management. If you can't identify the forest vegetation, you will not be able to manage it for timber, wildlife, recreational and other values.**

Course Objectives:

1. Learn parts of woody plants that are useful in their identification.
2. Understand the site characteristics that control the distribution of different species.
3. Learn the defining characteristics and utility of trees both locally and in North America.
4. Develop a collection of representative woody plants that can be used for future studies.
5. Be able to identify in the field each plant covered in laboratory.
6. Learn the scientific and common names of each plant studied.

Text: The book listed below is used primarily as a lab reference but is also useful for some of the lecture material. It is not a complete guide and was not developed as a formal textbook. **This book does not cover all topics/material and species that will be covered in lecture or lab so take notes and utilize supplemental materials on the course. IMPORTANT NOTE: THIS BOOK IS SIGNED OUT TO EACH STUDENT AND MUST BE RETURNED AT THE END OF THE SEMESTER OR YOU WILL LOSE POINTS ON YOUR FINAL GRADE.**

Hodges, John D., Evans, David L., Garnett, Linda W. Mississippi Trees. Mississippi State University Extension Service. 337 p. – See on-line version at:
http://www.cfr.msstate.edu/students/forestrypages/fd/fo2113/ms_trees.pdf

Other useful references and resources:

www.msstate.edu – log in to Oncampus to get course and lab materials on MyCourses (FO-2113-04).

Hardin, James W., Leopold, Donald J., and White, Fred M. 2001. Harlow & Harrar's Textbook of Dendrology. McGraw-Hill. 534p.

Duncan, Wilbur H. and Duncan, Marion B. 2000. Trees of the Southeastern United States. The University of Georgia Press. 322p.

Little, Elbert L. 1980. The Audubon Society Field Guide to North American Trees: Eastern Region. Alfred A. Knopf. 714p.

Miller, James H. and Miller Karl V. 1999. Forest Plants of the Southeast and Their Wildlife Uses. Southern Weed Science Society. 454p.

Petrides, George A. 1988. A Field Guide to Eastern Trees. Houghton Mifflin Company. 424p. (Peterson Field Guide)

Samuelson, Lisa J. and Hogan, Michael E. 2003. Forest Trees: A Guide to the Southeastern and Mid-Atlantic Regions of the United States. Prentis Hall. 429p.

<http://www.cnr.vt.edu/dendro/dendrology/main.htm> Virginia Tech
<http://www.forestry.auburn.edu/samuelson/dendrology/> Auburn University
<http://hua.huh.harvard.edu/FNA/> Flora of North America (incomplete but very useful key)
<http://mobot.mobot.org/W3T/Search/vast.html> Missouri Botanical Garden TROPICOS
<http://plants.usda.gov/> USDA Plants database
http://www.na.fs.fed.us/pubs/silvics_manual/table_of_contents.shtm USDA Forest Service
http://www.srs.fs.usda.gov/pubs/gtr/gtr_srs062/ (pub on non-native/invasive species)
<http://www.southeasternflora.com>

Grading: $\geq 90\%$ A; 80-89% B; 70-79% C; 60-69% D; $< 60\%$ F.

Lecture quizzes (unannounced) cover material presented in the previous lecture. Weekly field quizzes are comprehensive. Hour exams and the lecture final exam are comprehensive. A separate field final exam is also comprehensive and covers identification of all species covered in field labs throughout the term. The overall weighting of points for the final grade is:

Lecture quizzes and attendance	5%	Plant collection	10%
Lecture exam 1	10%	Field final exam	20%
Lecture exam 2	15%	Lecture final exam	20%
Weekly field quizzes	20%		

Attendance counts as two 5-point lecture quiz grades. Missed lecture quizzes cannot be made up. Return of your "Mississippi Trees" book automatically counts as 10 points (two 5-point quiz grades). Failure to return the book results in two 0's that can not be dropped.

The first hourly exam will tentatively be on Sept. 21 and the second exam will be Oct. 28. Field final is Nov. 2,3,4. Plant collections are due Nov. 11. The final exam is Friday, Dec. 3, 12-3:00.

Missed exams may not be taken at a later date. If you know you will have to be absent, with instructor approval, you may arrange to take an exam early. If you have an excused absence, with instructor approval you may elect to use your final exam grade as a substitute score for the missed exam. Missed field final will be replaced with adjusted lab quiz average. Lecture exams will not be returned.

***** SUBMISSION OF A COLLECTION AFTER THE DUE DATE WILL RESULT IN A ZERO (0) ON THE ASSIGNMENT. IRREGARDLESS, YOU MUST SUBMIT A PLANT COLLECTION TO PASS THE COURSE.**

***** YOU MUST PASS THE FIELD PORTION OF THE COURSE (WEEKLY QUIZZ AVERAGE AND FIELD FINAL EXAM MUST BE A COMPOSITE SCORE OF 60% OR GREATER) IN ORDER TO RECEIVE A PASSING GRADE IN THE COURSE.**

Class and Lab Policies:

1. There will be no cell phone use in class or lab. Please turn them off.
2. You may not use food, drink (except water for labs), or tobacco products in class or lab. No smoking, dipping or chewing. This is MSU policy and will be enforced.

Student Responsibilities:

You are expected to comply with all responsibilities outlined in the College of Forest Resources Handbook and the MSU Bulletin. You are reminded to adhere to the MSU Honor Code:

"AS A MISSISSIPPI STATE UNIVERSITY STUDENT I WILL CONDUCT MYSELF WITH HONOR AND INTEGRITY AT ALL TIMES. I WILL NOT LIE, CHEAT, OR STEAL, NOR WILL I

ACCEPT THE ACTIONS OF THOSE WHO DO."

Misconduct will be dealt with in accordance with the Academic Misconduct Policy accessible at: <http://www.msstate.edu/dept/audit/1207.html>. Please also see: http://www.msstate.edu/web/student_policies.html for additional guidance.

When taking field quizzes please cover quiz sheets so that other students cannot see your answers. Stand at least 10 feet from other students before writing your answers. **NO TALKING, GESTURING, WINKING, ETC., DURING QUIZZES!**

I expect you to fully participate in all aspects of the class and lab. You accept responsibility for class attendance. If an absence is essential, you must provide satisfactory evidence to substantiate the reason for the absence. Please come to class or lab prepared for the day's work by reading any assigned material and by reviewing your notes. Be engaged in class and lab discussions (appropriate comments and questions are always welcomed). Respect your fellow students and please refrain from disrupting the class. Treat all aspects of this experience as the early stages of your professional career and act the part.

Outdoor laboratories:

We will be walking (longest walk about 1.75 miles) through natural areas on uneven terrain containing briars, poison ivy, poisonous snakes, mud, and water. You should dress appropriately with proper clothing (jeans or other heavy pants for leg protection), footwear (boots), headgear (hardhat and eye protection recommended), and raingear if needed (rain does not cancel lab unless in severe weather conditions). During severe weather, the instructor may conduct the lab session indoors with plant specimens from the CFR herbarium.

Items you should bring to lab include: quiz sheets (at least 25 unless told otherwise; write-in-rain paper recommended), covered clipboard, pencil(s), notebook or paper (suggest write-in-rain paper), sharp knife, 10X hand lens, a plastic collection bag (garbage bags work fine), drinking water, insect repellent.

Quizzes may be given in the field at any time. It is your responsibility to bring at least 25 quiz sheets to each lab. Quiz sheets can be downloaded from the MyCourses page. Cut out the sheets (don't print out and tear at last minute before a lab). Answers to quizzes turned in on something other than quiz sheets will not be accepted.

Study specimens will be provided of the species covered in prior labs. These collections will be located in the herbarium cases in A208. Should specimens be abused or disappear, they will be locked up, so please help us maintain this resource for you and others to use. I will conduct voluntary field review sessions during the semester for those who would like additional help. These are typically done on Fall Field Day, during Fall Break and the weekend prior to the field final exam. If you need additional help, please don't hesitate to contact me or your lab assistant.

Attendance at all laboratory sessions is mandatory. Unexcused absences will result in a reduction of your grade through missed quizzes.

Course Resources Found on MyCourses (FO-2113-04):

***** IT IS YOUR RESPONSIBILITY TO DOWNLOAD AND READ THE COMPLETE SYLLABUS WITH PLANT COLLECTION INSTRUCTIONS.**

Other materials include lecture slides, **quiz slips for labs**, keys to hickories, species lists, lab notes, example questions, etc.

Tentative Schedule of Lecture Topics

#	Topic (number of lectures)
1	Introduction, Classification & Nomenclature (1/2)
2	Identification (1/2)
3	Interspecific Variation (1/2)
4	Vegetative morphology (1)
5	Reproductive morphology (1/2)
6	Tree growing regions of the United States (2)
	Habitat, Range, & Plant Communities
7	Mississippi Physiography (1)
8	Magnoliophyta (Angiosperms): Classes Magnoliopsida, Liliopsida (1/2)
9	Aceraceae, Anacardiaceae, Annonaceae, Aquifoliaceae, Araliaceae (1)
10	Betulaceae, Bignoniaceae, Caesalpiniaceae (1)
11	Caprifoliaceae, Cornaceae, Ebenaceae, Ericaceae (1)
12	Euphorbiaceae, Fabaceae, Fagaceae (3)
13	Site preferences (1)
14	Hamamelidaceae, Hippocastanaceae, Juglandaceae (1)
15	Lauraceae, Magnoliaceae, Meliaceae, Mimosaceae, Moraceae (1)
16	Myricaceae, Oleaceae, Platanaceae, Rhamnaceae, Rosaceae (1)
17	Rubiaceae, Rutaceae, Salicaceae, Scrophulariaceae, Simaroubaceae (1)
18	Styracaceae, Symplocaceae, Tiliaceae, Ulmaceae (1)
19	Pinophyta (Gymnosperms) , Ginkgoaceae, Taxaceae (1/2), error 50-51
20	Cupressaceae (1)
21	Pinaceae, genera: <i>Abies</i> , <i>Larix</i> , <i>Picea</i> (1)
22	Pinaceae, genus: <i>Pinus</i> (eastern yellow (hard) pines) (1)
23	Pinaceae, genus: <i>Pinus</i> (western yellow (hard) pines) (1)
24	Pinaceae, genus: <i>Pinus</i> (soft pines) (1/2)
25	Pinaceae, genera: <i>Pseudotsuga</i> , <i>Tsuga</i> (1/2)

REFER TO MS TREES BOOK FOR INDIVIDUAL SPECIES FOUND IN MS COVERED FROM FAMILIES LISTED ABOVE.

INSTRUCTIONS FOR PLANT COLLECTION

You are required to turn in specimens for **50 species** from the master list for the course representing at least **25 plant families**. **No ornamental or exotic escaped species** (denoted as # and * on the master list) are allowed unless you are enrolled in the urban forestry option. Specimens may not be collected from the MSU main campus or from the South Farm Arboretum. You may collect from the North Farm, Starr Forest and any private property on which you have been granted access. If you collect on the Noxubee Refuge, be sure to have in your possession a copy of the special-use collection permit provided at the beginning of the semester.

Twigs and leaves should be cut off the tree, not torn. You should avoid collecting damaged leaves. Specimens should be pressed between multiple layers of newspaper separated by sheets of cardboard (for ventilation and proper drying). Use pieces of plywood for the outside of the press and bind the press together with ropes or old belts. Drying typically takes about 1 week. Do not make your collection late in the semester and turn in improperly dried specimens. Collections may be turned in at any time, but **no later than 5:00 PM Thursday, November 11**. Keep in mind that a number of the deciduous species start to lose leaves fairly early and should be collected soon. **START NOW!**

Mount dried specimens on **8.5 x 11 inch card stock** (available at office supplies stores; copy machine paper is not acceptable) with **clear-drying white or wood glue** suitable for porous surfaces. Hot glue guns also work well if used carefully to avoid glue strings. Large leaves may be affixed to the back of the page if required for extra space (put note to refer to back of page). **DO NOT GLUE LEAF BLADES TO SHEETS**. Show both front and back of leaf blades for those specimens that have diagnostic surface characteristics. Each specimen **must include a twig** with at least 1, preferably more, **attached complete leaves** and petioles from additional leaves to illustrate leaf arrangement. On specimens that indicate pith characteristics as a field recognition feature, cut a transverse section out of the twig to expose a one-inch portion of the pith. Flowers or fruit should be included if they are available and can be mounted easily.

Mounted specimens should be placed inside a large **3-ring binder(s)**. **Clear document sleeves** must be used to protect your specimens. Each specimen will be labeled with the following information typed at the bottom left and right corners of the sheet (no points given for labels on incorrectly identified specimens):

Family name:	Collected by:
Scientific name:	Date:
Common Name:	Location:
Field Recognition Features: (list three specific features)	(proper name of place including county and state)

All collections must have a **table of contents** including the family, genus, species, common name and page number. The table of contents should be arranged alphabetically by family then within family, by genus and species. Page numbers should be typed on each specimen page in the upper right hand corner. Collections will be graded on accuracy, completeness, and neatness. Grading for correctly identified specimens will be as follows: leaves and twig = 10 points, labeling = 10 points. **Total collection point value** (20 points per specimen x 50 specimens + 50 points for table of contents + 25 points for 25 families + 25 points for overall presentation) = **1100 points**.

***** FAILURE TO SUBMIT A COLLECTION BY THE DUE DATE WILL RESULT IN A ZERO FOR THE ASSIGNMENT. FAILURE TO TURN IN A COLLECTION WILL RESULT IN FAILURE OF THE COURSE.**