
BIOL 3610 – Dendrology

Fall Semester 2022

[CRN 82005 (Sect. A), CRN 85005 (Sect. B)]

Instructor: Dr. Carter

Office: BC 1105 *Herbarium:* [BC 1040](#)

Telephone: (229) 333-5338

e-mail: Please use the mail tool in BlazeVIEW.

Office Hours (BC 1040): Mon & Wed 11:00 AM–12:00 PM; Thurs 1:00–4:00 PM; other times by appointment

Weekly Course Schedule

Section A

Mon	Lec	10:00–10:50 AM, BC 1024
Wed	Lec	10:00–10:50 AM, BC 1024
Thurs	Lab	9:30 AM–12:20 PM, BC 2040
Fri	Lec	10:00–10:50 AM, BC 1024

Section B

Mon	Lec	9:00–9:50 AM, BC 1024
Wed	Lec	9:00–9:50 AM, BC 1024
Fri	Lec	9:00–9:50 AM, BC 1024
	Lab	1:00–3:50 PM, BC 2040

Course Description

Pre-requisite: Completion of Core Area D. A survey of the biology and diversity of trees and of the major forest communities. Course will emphasize species of the southeastern United States and forest communities of North America, including field identification, description and classification of forest communities, and a study of reproductive cycles, anatomy, and development of representative species. [3-3-4]

Lecture contact: 75 mins X 30 lectures = 2250 mins

Laboratory contact: 170 mins X 15 labs = 2550 mins

Credit: 4 semester hrs

Course Outcomes

Following is a list of course outcomes linked to Biology Department Educational Outcomes (B) and Valdosta State University General Education Outcomes (V).

- The student will demonstrate understanding of the basic principles of taxonomy, including identification, nomenclature, and classification. [B 2; V 4, 7]
- The student will demonstrate comprehension of basic concepts and the ability to use scientific terminology accurately through effective oral and written communication and the use of dichotomous keys. [B 1; V 4, 5, 7]
- The student will demonstrate the ability to handle and analyze plant materials in the field and laboratory. [B 1; V 5, 7]
- The student will demonstrate the ability to work and use basic equipment effectively in the field and laboratory. [B 1; V 4, 5, 7]
- The student will demonstrate the ability to gather and analyze data scientifically. [B 1, 5; V 3, 5]
- The student will demonstrate the ability to follow oral and written instructions effectively. [V 4, 7]
- The student will demonstrate the ability to access course resources and complete assignments on-line using computer technology (i.e., BlazeView). [V 3]
- The student will demonstrate the ability to complete assignments, quizzes, and examinations ethically. [V 8]

Assessment of learning

- Three lecture examinations, including a comprehensive final examination, will be given.
- Routine field identification quizzes will be given.
- Various miscellaneous quizzes and assessments will be given.
- Students will be required to complete an experiential learning project.

Required textbooks

- Duncan, W.H. and M.B. 2000. *Trees of the Southeastern United States*. Univ. of Georgia Press, Athens. 336 pp. [If this book cannot be purchased through the VSU Bookstore, then used copies can be found on-line at a reasonable price through Amazon, Abebooks, or Alibris.]
- Elias, T.S. 1987. *The Complete Trees of North America*. Gramercy Publishing Company, New York. [Multiple copies of this text for in-library use are available on reserve in the VSU Odum Library.]

Miscellaneous required items

- Pencils or pens for recording notes, etc.
- Large three-ring binder for lecture and field notes
- Spiral bound notebook, convenient for field trips
- Hand-lens (provided by instructor)
- 200 3X5 inch lined, white notecards for field quizzes

Additionally, the following are recommended.

- Old clothes, including long pants, and sturdy shoes or boots for field trips
- Rain gear and warm clothing, as appropriate
- Insect repellent for field trips
- *Immediately upon returning from field trips, students are urged to check their bodies thoroughly for ectoparasites (i.e. ticks) and, if possible, to shower.*
- Bottled water for field trips

COVID guidance [updated 3/11/2022]. The University System of Georgia (USG) continues to recognize COVID-19 vaccines and boosters offer safe, effective protection and urges all students, faculty, staff and visitors to get vaccinated and/or boosted either on campus or with a local provider. As USG works closely with the Georgia Department of Public Health to prioritize the health and safety of campus communities, the system encourages people to wear masks based on their preference and assessment of personal risk. Additional information may be found at the following address: <https://www.valdosta.edu/campus-operations>.

Attendance, punctuality, participation and cooperation. Regular attendance and punctuality and full participation and cooperation are expected. The student is responsible for all material missed, regardless of the reason for absence. Students arriving late for class should enter the lecture room or laboratory quietly and take the nearest seat to avoid disruption. Bear in mind that field trips normally require prompt departure from campus and that tardiness could easily result in a student missing transportation to the field site and absence from the field trip. Such absences will adversely affect the course grade. Attendance will normally be taken at the beginning of the period. Students who arrive after the roll is called are counted absent unless they inform their instructor immediately after class or lab of their tardiness. It is the student's responsibility to inform the instructor of her/his tardiness. Each three cases of tardiness will be counted as one absence, and cases of tardiness will be counted as absences thusly, unless a satisfactory explanation is provided to the instructor by the student. It is the instructor's prerogative to have the explanation in writing. Any scheduling problems or other extenuating circumstances necessitating chronic tardiness should be explained to the instructor in writing and properly documented at the beginning of the semester. In order to have an absence excused, the student must provide a written explanation with proper documentation immediately upon returning to class. Providing an explanation of absence or tardiness by the student does not insure that the absence or tardiness will be excused. The instructor shall determine the validity of all excuses. Students absent from more than 20% of the regularly scheduled lecture and laboratory periods are subject to failure in the course, as detailed under Absence Regulations in the VSU Undergraduate Catalog: <http://catalog.valdosta.edu/undergraduate/academic-affairs/>. *Points will be deducted from the final course grade for excessive unexcused absence or tardiness, and inadequate participation and cooperation.*

BlazeVIEW D2L. A variety of course resources and materials will be made available through BlazeVIEW, and it will also be used to post announcements and grades and to administer assignments, assessments, and quizzes. Students should log into BlazeVIEW daily in order to check for course announcements and assignments. The Mail tool in BlazeVIEW provides a convenient means for students to contact their instructor and one another, and it

should always be used to communicate about matters relating to the course. To access BlazeVIEW, select the following link under the Current Students tab on the Valdosta State University homepage: [Dendrology XLS Group 62 Fall 2022 CO \(85005.85324\)](#). Students experiencing difficulties using BlazeVIEW should seek assistance through the VSU Information Technology HELP-Desk in Odum Library (telephone 245-4357).

Field trips. A separate schedule for field trips will be distributed during the first week of class.

Lecture examinations. At least two lecture examinations will be given during the semester, one of these prior to midterm. Collectively, these exams account for 250 points in determining the overall course grade.

Final examination. A comprehensive final examination will be given during the scheduled final examination period, which will comprise elements of both lecture and laboratory, and will account for 250 points in determining the overall course grade.

Tree identification quizzes. From memory, the student will be required to identify by *family name*, *scientific name (binomial)*, and *common name* major native and naturalized locally occurring trees. These quizzes will be given outdoors on field trips or indoors, as circumstances require. Study specimens protected within plastic sleeves will be available for student use in the laboratory (BC 2040). Photographs of these specimens and specimens in the VSU Virtual Herbarium may be used for these quizzes to supplement living specimens. Collectively, the tree identification quizzes will account for 250 points in determining the overall course grade.

Miscellaneous quizzes and assessments. A number of miscellaneous quizzes and assessments will be given during the semester to be completed during lecture or laboratory or submitted on-line through BlazeVIEW. These miscellaneous quizzes and assessments collectively will account for 150 points in determining the overall course grade.

Experiential Learning [EL]. Each student will be required to prepare independently a Powerpoint presentation summarizing their experiential learning activities. EL activities shall be done outside of regularly scheduled lecture and laboratory periods and shall be restricted to activities that reinforce course content as outlined in the course syllabus. The EL project will involve each student capturing and maintaining a set of original, high quality photographs of ten (10) properly identified native and naturalized tree species from the southeastern United States. A handout will be provided, detailing requirements and standards for the EL component of the course, including a rubric that will be used to evaluate the EL Powerpoint. The EL component accounts for 100 points in determining the overall course grade.

Grading. If a student thinks an error has been made in grading an examination, quiz, or any other assignment, s/he should communicate about this directly with the instructor *within one week* of the instructor's returning of the graded examination, quiz, or assignment, or posting the result in BlazeVIEW D2L. The final course average is calculated as follows.

Grading scale
A = 900-1000 points
B = 800-899 points
C = 700-799 points
D = 600-699 points
F = <600 points

<i>Allocation of points</i>	
Lecture exams	250 points
Final exam	250 points
Tree identification quizzes	250 points
Misc. quizzes and assessments	150 points
<u>Experiential learning</u>	<u>100 points</u>
Total	1000 points

Meeting the minimum point requirement for a letter grade does not necessarily assure that the student will receive that grade. Assignment of the final grade is the prerogative of the instructor and will be based upon each individual student's overall performance, including patterns of consistency, trends toward improvement, and positive attitude as shown through attendance, participation, and cooperation. *Points will be deducted from the final course grade for excessive unexcused absence or tardiness, and inadequate participation and cooperation.*

Class conduct. Students are expected to comport themselves courteously at all times during lecture and laboratory, and on-line. Disruptive behavior will not be tolerated, and students behaving in a disruptive manner will be referred to the Dean of Students for disciplinary action. Refer to the Student Code of Conduct, Appendix A in the *VSU Student Handbook*. Although not a requirement, students are urged to wear face masks when working indoors in close quarters during lecture and laboratory, and when working in the laboratory outside of the scheduled laboratory period. Consumption of food or drink (including water) is prohibited in the laboratory and the lecture room. Students should be punctual for all scheduled lecture and laboratory meetings, and, except in situations of emergency, students should not depart from lecture before being dismissed. Students are to direct their full attention to lecture and are to refrain from unwarranted discourse. Behavior contrary to these guidelines is disruptive. Disruptive behavior will result in deduction of points from the final grade.

Use of cellular telephones, pagers, digital cameras, and other such communication devices. Use of cellular telephones, pagers, or any similar communication device or digital camera is prohibited during lecture, examinations, or quizzes, unless expressly authorized by instructor. If students bring cellular telephones or any other similar devices to lecture, it is their responsibility to switch them off prior to the beginning of the lecture period. Ringing, buzzing, or any other sounds emitted from such devices will be treated as disruptive behavior on the part of the owner/possessor, and the owner/possessor will be asked to leave lecture immediately.

Academic integrity. Students are encouraged to work together and to learn from one another in an appropriate manner. Cooperation between students is especially encouraged in study outside of class. However, students should bear in mind that most work ultimately must be done individually and independently. All examinations, tests, and quizzes are given to students individually and are to be completed independently.

Non-Discrimination and Title IX Statement. Valdosta State University (VSU) upholds all applicable laws and policies regarding discrimination on the basis of race, color, sex (including sexual harassment and pregnancy), sexual orientation, gender identity or expression, national origin, religion, age, veteran status, political affiliation, or disability. The University prohibits specific forms of behavior that violate Title IX of the Education Amendments of 1972. Title IX of the Education Amendments of 1972 prohibits discrimination on the basis of sex in education programs and activities that receive federal funding. VSU considers sex discrimination in any form to be a serious offense. Title IX refers to all forms of sex discrimination committed against others, including but not limited to: sexual harassment, sexual assault, sexual misconduct, and sexual violence by other employees, students or third parties and gender inequity or unfair treatment based on an individual's sex/gender. The designated Title IX Coordinator for VSU is Mr. Darius Thomas. To view the full policy or to report an incident visit: <https://www.valdosta.edu/administration/student-affairs/title-ix/>

Accommodations Statement. Students with disabilities who are experiencing barriers in this course may contact the Access Office (<https://www.valdosta.edu/student/disability/>) for assistance in determining and implementing reasonable accommodations. The Access Office is located in University Center Room 4136 Entrance 5. The phone numbers are 229-245-2498 (V), 229-375-5871. For more information, please visit VSU's Access Office or email: access@valdosta.edu. To request reasonable accommodations for pregnancy and childbirth, contact Christina Kidd, Student Conduct Coordinator at chkidd@valdosta.edu. Please note, you will be required to provide documentation from an appropriately licensed medical professional indicating the requested accommodations are medically necessary.

Student Opinion of Instruction (SOI). At the end of the term, students are expected to complete an online SOI survey through SmartEvals. Students will receive email notification through their VSU email addresses when the SOI is available, generally at least one week before the end of the term. SOI responses are anonymous, and instructors and administrators will be able to access the results only after final grades have been submitted. Students who withdraw or drop a course will also be sent invitations to complete the Dropped Course Survey. Complete information about the SOIs, including how to access the survey, is available on the [SOI Procedures webpage](#).

Supplemental Reading

For current information on classification of angiosperm plant families –

Stevens, P. F. (2001 onwards). Angiosperm Phylogeny Website. Version 9, June 2008 [and more or less continuously updated since]. <http://www.mobot.org/MOBOT/research/APweb/> (Accessed: March 11, 2012)

For plant community classification –

Barbour, M.G., M.G. and N.L. Christensen. 1993. Vegetation, pp. 97-131 in: Morin, N.R. (Ed.). Flora of North America, Vol. 1. Oxford University Press. New York.

Description of the Ecoregions of the United States, compiled by R.G. Bailey, U.S. Forest Service. March 1995. <http://www.fs.fed.us/land/ecosysmgmt/index.html> (Accessed: March 11, 2012)

Ecological Subregions of the United States, compiled by McNab, W.H. and P.E. Avers. U.S. Forest Service. WO-WSA-5. July 1994. <http://www.fs.fed.us/land/pubs/ecoregions/> (Accessed: March 11, 2012)

Ecoregions, Nearctic. World Wildlife Fund, 1250 Twenty-Fourth Street, N.W., P.O. Box 97180, Washington, DC 20090-7180. http://www.worldwildlife.org/wildworld/profiles/terrestrial_na.html (Accessed: March 11, 2012)

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer> (Accessed: March 11, 2012)

Peet, R.K., T.R. Wentworth, and P.S. White. 1998. A Flexible, Multipurpose Method for Recording Vegetation Composition and Structure. *Castanea* 63:262 -274.

Thorne, R.F. 1993. Phytogeography, pp. 132-153 in: Morin, N.R. (Ed.). Flora of North America, Vol. 1. Oxford University Press. New York.

Wharton, C.H. 1978. Physiography and Biota of Georgia. *BioScience* 28:336-339.

Wharton, C.H. 1978. The Natural Environments of Georgia. Bulletin 114, Georgia Department of Natural Resources. Atlanta.

Miscellaneous –

Peattie, D.C. 1980. Natural History of Western Trees. University of Nebraska Press. Lincoln. 751 pp.

Peattie, D.C. 2007. A Natural History of Trees: of Eastern and Central North America. Houghton Mifflin Co. New York. 606 pp.

Tomlinson, P. B. 2002. The Biology of Trees Native to Tropical Florida. Second Edition. Printed privately. Petersham, Massachusetts. 395 pp.

Tentative Course Outline with *Laboratory Schedule

Week of Aug 15

First Class Day – Mon, Aug 15

Lecture:

Introduction to Course

What is a tree? What is a forest?

Overview of the Classification of Plants

*Laboratory: Identification and Classification of Trees

Week of Aug 22

What is a tree? What is a forest?

Overview of the Classification of Plants

*Laboratory: Identification and Classification of Trees

Week of Aug 29

Diversity of Trees

Gymnosperms

GINKGO

- Ginkgoales: Ginkgoaceae: *Ginkgo*: ginkgo

CONIFERS

- Pinales: Cupressaceae, Pinaceae, Taxaceae: *Chamaecyparis*, *Juniperus*, *Taxodium*; *Abies*, *Pinus*, *Picea*, *Tsuga*; *Taxus*, *Torreya*: white cedars, junipers, baldcypresses; firs, pines, spruces, hemlocks; yews, gopherwood

*Laboratory: Identification and Classification of Trees

Week of Sep 5

Labor Day Holiday: Mon, Sep 5

Lecture: Diversity of Trees

Angiosperms

ANA GRADE

- Austrobaileyales: Schisandraceae [incl. Illiciaceae]: *Illicium*: Florida anise

MAGNOLIIDS

- Magnoliales, Laurales: Magnoliaceae, Annonaceae; Lauraceae, Calycanthaceae: *Liriodendron*, *Magnolia*; *Asimina*; *Persea*, *Sassafras*, *Litsea*; *Calycanthus*: magnolias, yellow poplar; pawpaws; redbay, swampbay, sassafras, pondspice; sweetshrub

MONOCOTS

- Arecales: Arecaceae: *Sabal*: cabbage palm

*Laboratory: Identification and Classification of Trees

Week of Sep 12

Lecture: Diversity of Trees

EUDICOTS

- Proteales, Saxifragales: Platanaceae; Hamamelidaceae, Altingiaceae: *Platanus*; *Hamamelis*, *Liquidambar*: sycamore; witch hazel, sweetgum
- Malpighiales: Euphorbiaceae, Salicaceae, Rhizophoraceae: *Triadica*; *Populus*, *Salix*; *Rhizophora*: Chinese tallow; willows, cottonwoods; red mangrove
- Fabales: Fabaceae: *Acacia*, *Albizia*, *Robinia*, *Gleditsia*, *Cercis*: acacias, mimosas, locusts, redbud

*Laboratory: Identification and Classification of Trees

Week of Sep 19

Lecture: Diversity of Trees

- Rosales: Rosaceae, Rhamnaceae, Ulmaceae, Celtidaceae, Moraceae: *Amelanchier*, *Crataegus*, *Malus*, *Prunus*; *Rhamnus*; *Planera*, *Ulmus*; *Celtis*; *Broussonetia*, *Morus*: serviceberries, hawthorns, crabapples, plums, cherries; Carolina buckthorn; elms; hackberries; mulberries

*Laboratory: Identification and Classification of Trees

Week of Sep 26

Lecture: Diversity of Trees

- Fagales: Fagaceae: *Castanea*, *Fagus*, *Quercus*: chestnuts, chinkapins, beeches, oaks
- Fagales (continued): Betulaceae, Myricaceae, Juglandaceae: *Alnus*, *Betula*; *Morella*, *Myrica*; *Carya*, *Juglans*: alder, birches; bayberries; hickories, walnuts

*Laboratory: Identification and Classification of Trees

Week of Oct 3

Lecture: Diversity of Trees

- Cornales: Hydrangeaceae, Cornaceae: *Philadelphus*; *Cornus*, *Nyssa*: mock oranges; dogwoods, gums
- Ericales: Sapotaceae, Theaceae, Ericaceae, Ebenaceae, Cyrillaceae, Styraceae, Symplocaceae: *Sideroxylon*; *Gordonia*, *Stewartia*; *Elliottia*, *Kalmia*, *Lyonia*, *Oxydendrum*; *Diospyros*; *Cliftonia*, *Cyrilla*; *Halesia*, *Styrax*; *Symplocos*: buckthorns; loblolly bay, silky camellia; mountain laurel, lyonias, sourwood; persimmon; titis; silverbells, storaxes; sweetleaf

Midterm: Thurs, Oct 6

*Laboratory: Identification and Classification of Trees

Week of Oct 10**Fall Break: Mon–Tues, Oct 10–11**

Lecture: Diversity of Trees

- Myrtales: Combretaceae: *Combretum*, *Laguncularia*: buttonwood, white mangrove
- Malvales: Malvaceae: *Tilia*: basswoods

*Laboratory: Identification and Classification of Trees

Week of Oct 17

Lecture: Diversity of Trees

- Sapindales: Rutaceae, Meliaceae, Anacardiaceae, Sapindaceae: *Poncirus*, *Ptelea*, *Zanthoxylum*; *Melia*; *Rhus*, *Metopium*, *Schinus*, *Toxicodendron*; *Acer*, *Aesculus*, *Sapindus*: mockorange, wafer ash, prickly ashes; Chinaberry; sumacs, poisonwood, Brazilian pepper; maples, buckeyes, soapberry

*Laboratory: Identification and Classification of Trees

Week of Oct 24

Lecture: Diversity of Trees

- Gentianales: Rubiaceae: *Cephalanthus*, *Pinckneya*: buttonbush, feverbark
- Lamiales: Oleaceae, Bignoniaceae, Avicenniaceae: *Chionanthus*, *Fraxinus*, *Ligustrum*, *Osmanthus*; *Catalpa*; *Avicennia*: graybeard, ashes, ligustrums, wild olive; catalpas; black mangrove

*Laboratory: Identification and Classification of Trees

Week of Oct 31

Lecture: Diversity of Trees

- Aquifoliales: Aquifoliaceae: *Ilex*: hollies
- *Laboratory: Identification and Classification of Trees

Week of Nov 7

Lecture: Diversity of Trees

- Apiales: Apiaceae: *Aralia*: devil's walking stick
- Dipsacales: Adoxaceae: *Sambucus*, *Viburnum*: elderberries, viburnums

*Botany Laboratory: Development and Structure of the Woody Plant Body 1

Week of Nov 14

Lecture:

- Biogeography of Trees
- Abscission and Changing Leaf Color

*Botany Laboratory: Development and Structure of the Woody Plant Body 2

Week of Nov 21

Lecture: Introduction to Forest Ecology

- Mycorrhizae
- Ecological Succession and Fire
- Threats to Trees and Communities

*No lab this week

Thanksgiving Holidays: Wed–Fri, Nov 23–25**Week of Nov 28**

Lecture: Major Forest Communities of North America

*Botany Laboratory: Reproduction in Pine and Oak

Mon, Dec 5 – Last Class Day**Final Examination**

Section A: Tues, Dec 6, 10:15 AM–12:15 PM

Section B: Fri, Dec 9, 8:00–10:00 AM