BIOL 3610/5610 – Dendrology — Fall Semester 2020

Instructor: Dr. Carter
Office: BC 1105 *Herbarium:* BC 1040
Telephone: (229) 333-5338
e-mail: Please use the mail tool in BlazeVIEW.

Virtual Office Hours through Blackboard Collaborate Ultra in BlazeVIEW: Mon & Wed 1:00–1:50 PM; 3:15–4:00 PM;

Weekly Course Schedule

Mon	Lec	11:00–11:50 AM, BC 1024
Wed	Lec	11:00–11:50 AM, BC 1024
Fri	Lec	11:00–11:50 AM, BC 1024
	Lab	12:00–2:50 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 will be given.
- Routine field identification quizzes will be given.
- Various miscellaneous assessments will be given.
- Students will participate in service learning projects.
- Students will keep a course notebook.

Required Texts

- Duncan, W.H. and M.B. 2000. *Trees of the Southeastern United States.* Univ. of Georgia Press, Athens. 336 pp.
- Faircloth, W.R. 1977. *Common Trees of Central-South Georgia*. Valdosta State University Bookstore.
- *Elias, T.S. 1987. *The Complete Trees of North America.* Gramercy Publishing Company, New York. *[*Copies of this text have been placed on reserve in the library.]*

Miscellaneous Required Items

- Pencils or pens for recording notes, etc.
- Spiral bound notebook, convenient for field trips
- Hand-lens with lanyard

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 repellant 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

Requirements and Information Related to Covid-19. As the Blazer Creed states, members of the VSU community are expected to live by the high standards of civility, integrity, and citizenship and embrace their responsibility as a member of the Blazer community. In recognition of this responsibility, and in response to the best available science and current guidance from the Centers for Disease Control and Prevention and the Georgia Department of Public Health, every student must wear a face covering that covers their nose and mouth at all times while in any campus building, including in this classroom. This requirement is intended to protect the health and safety of all VSU students, the instructor, and the entire university community. Anyone attending class without a face covering will be asked to put one on or leave. Students should also be sure they maintain a distance of at least six feet away from their fellow students and instructor and are seated in a seat that is designated to ensure that distance. Face masks and social distancing are also required both outdoors and in the laboratory during scheduled laboratory periods. Students who refuse to wear face coverings appropriately or to adhere to other stated requirements may face disciplinary action for Code of Conduct violations.

VSU cares about student success both on and offline, and a variety of resources are available to help students both academically and personally during the Fall 2020 semester. VSU's Coronavirus FAQ page located at https://www.valdosta.edu/health-advisory/faq.php. Information is available there about a variety of topics in VSU's return-to-campus plan. A website devoted to the health and wellness of VSU students can be seen at https://www.valdosta.edu/administration/finance-admin/campus-wellness/student-resources.php. You can find information, including how you can access the Brightspace Pulse app that will allow you to view BlazeVIEW on your smartphone at https://www.d2l.com/products/pulse/. In BlazeVIEW, all VSU students have a course with guides for how to use tools in BlazeVIEW; search for "VSU BlazeVIEW Student Tutorial 2020."

Participation and punctuality. Although regular participation and punctuality are expected, students will be permitted to participate remotely in lectures via Blackboard Collaborate Ultra in BlazeVIEW. Whether participation is face-to-face or remotely via the internet, the student is responsible for all material covered during lecture and all assignments and assessments. 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.

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, quizzes and exams. 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 link under the Current Students tab on the Valdosta State University homepage. Students experiencing difficulties using BlazeVIEW should seek assistance through the VSU Information Technology HELP-Desk in Odum Library (telephone 245-4357).

Field trips. Because of Covid-19 restrictions, the number of field trips will be reduced and course field trips will be restricted to scheduled lab meetings and to campus and sites adjacent to campus.

Lecture examinations. At least two lecture examinations will be given during the semester, one of these prior to midterm. Each of these exams accounts for 100 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 200 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. Beginning the second week of the semester, on-line quizzes will be given weekly to test students' proficiency with tree identification. Study specimens protected within plastic sleeves will be available for student use in the laboratory. Photographs of these specimens and specimens in the VSU Virtual Herbarium will be used for these quizzes. Collectively, the tree identification quizzes will account for 200 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 or submitted on-line through BlazeVIEW. These miscellaneous quizzes and assessments collectively will account for 200 points in determining the overall course grade.

Virtual tree collection. Students will be required to submit electronically a virtual tree collection of detailed original photographs of native and naturalized trees in PowerPoint. A complete protocol for preparing the virtual tree collection will be provided through BlazeVIEW D2L, including required plant organs and other structures to be included, organization of the collection, and grading rubric. The virtual tree collection is due no later than the beginning of the final exam period and accounts for 100 points in determining the overall course grade.

Citizen science service learning. Each student will be required to participate in a citizen science service learning project transcribing data from 150 plant specimen labels on-line through Notes from Nature (NfN). It is estimated that completion of this project will require four to five hours. Instructions will be provided through BlazeVIEW. Citizen science service learning accounts for 100 points in determining the overall course grade, and the deadline for completing this project is no later than the beginning of the scheduled final exam period.

Graduate credit. Students registered for BIOL 5610 will be required to complete and submit a term project for grading (200 points). Graduate students should meet with their instructor during the first week of the semester to discuss their project assignments.

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. The final course average is calculated as follows.

BIOL 3610
A = 900-1000 points
B = 800-899 points
C = 700-799 points
D = 600-699 points
F = <600 points

Allocation of points:	
Lecture Exam 1	100 points
Lecture Exam 2	100 points
Final Exam	200 points
Tree identification quizzes	200 points
Misc. quizzes and assessments	200 points
Virtual tree collection	100 points
Citizen science service learning	100 points
Total	1000 points

BIOL 5610

A = 1100-1200 points
B = 1000-1099 points
C = 900-999 points
D = 800-899 points
F = <800 points

Allocation of points:	
Lecture Exam 1	100 points
Lecture Exam 2	100 points
Final Exam	200 points
Tree identification quizzes	200 points
Misc. quizzes and assessments	200 points
Virtual tree collection	100 points
Citizen science service learning	100 points
Term project	200 points
Total	1200 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.

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*. As indicated above, students are required to wear face masks at all time 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: Adherence to this rule is particularly essential during the current Covid-19 crisis. 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.

Title IX Statement. Valdosta State University (VSU) is committed to creating a diverse and inclusive work and learning environment free from discrimination and harassment. VSU is dedicated to creating an environment where all campus community members feel valued, respected, and included. Valdosta State University prohibits discrimination on the basis of race, color, ethnicity, national origin, sex (including pregnancy status, sexual harassment and sexual violence), sexual orientation, gender identity, religion, age, national origin, disability, genetic information, or veteran status, in the University's programs and activities as required by applicable laws and regulations such as Title IX. The individual designated with responsibility for coordination of compliance efforts and receipt of inquiries concerning nondiscrimination policies is the University's Title IX Coordinator: Maggie Viverette, Director of the Office of Social Equity, titleix@valdosta.edu, 1208 N. Patterson St., Valdosta State University, Valdosta, Georgia 31608, 229-333-5463.

Students with disabilities. Students with disabilities who are experiencing barriers in this course may contact the Access Office for assistance in determining and implementing reasonable accommodations. The Access Office is

located in Farbar Hall. The phone numbers are 229-245-2498 (V) and 229-375-5871 (VP). For more information, please visit VSU's Access Office.

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 17
Classes begin – Mon, Aug 17
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 24
What is a tree? What is a forest?
Overview of the Classification of Plants
*Laboratory: Identification and Classification of Trees

Week of Aug 31
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 7
Labor Day Holiday – Mon, Sept 7
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 14
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 21
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 28
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 5
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 date – Thurs, Oct 8
*Laboratory: Identification and Classification of Trees

Week of Oct 12
Lecture: Diversity of Trees
- Myrtales: Combretaceae: *Combretum, Laguncularia:* buttonwood, white mangrove
- Malvales: Malvaceae: *Tilia:* basswoods
- 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 19
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 26
Lecture: Diversity of Trees
- Aquifoliales: Aquifoliaceae: *Ilex:* hollies
- Apiales: Apiaceae: *Aralia:* devil's walking stick
- Dipsacales: Adoxaceae: *Sambucus, Viburnum:* elderberries, viburnums

*Laboratory: Identification and Classification of Trees

Week of Nov 2
Lecture:
- Biogeography of Trees
- Abscission and Changing Leaf Color

*Laboratory: Identification and Classification of Trees

Week of Nov 9
Lecture: Introduction to Forest Ecology
- Mycorrhizae
- Ecological Succession and Fire
- Threats to Trees and Communities

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

Week of Nov 16
Lecture: Major Forest Communities of North America
*Botany Laboratory: Reproduction in Pine and Oak

Week of Nov 23
Last day for on-campus classes – Tues, Nov 24
Thanksgiving Holiday – Wed–Fri, Nov 25–27

Nov 30 – Dec 7
Flex Week – Final Exam Preparation, Project Preparation, and Virtual Review

***Final Examination** – Thurs, Dec 10, 10:15AM–12:15PM*