

DENDROLOGY: BIOL 305
Frostburg State University
Fall Semester 2014
3 credits

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Contact Information

205 Compton Hall, 301-687-4213, slbrosi@frostburg.edu

If unavailable contact Ms. Bebe Elrick, Administrative Assistant, 301-687-4166

Course Hours

Lecture Section 001: Monday 2-3 pm, Compton Science Center 226

Lab Section 002: Tuesday 8:30 am-12:20 pm, Compton Science Center 316

Lab Section 003: Thursday 8:30 am-12:20 pm, Compton Science Center 316

You may not attend the other lab section without prior authorization.

Lab begins promptly at 8:30 am because of outside lab time, if you are tardy you will be absent. Please note that some laboratories may extend past 12:20, please notify instructor if you have a class prior to 1pm. For field labs we meet at the University Police Station.

Dr. Brosi will only respond to emails from your official FSU email accounts.

Office Hours

Monday 1-2 pm

Tuesday 1:30-2:30 pm

Wednesday 8-10 am

Thursday 1:30-2:30 pm

Additional times are available by appointment.

Required Textbooks

Core, E.L. and N.P. Ammons, 1958, Woody Plants in Winter, West Virginia Univ. Press.

Petrides, G.A. and R.T. Peterson, 1998, A Fieldguide to Eastern Trees, Peterson's Fieldguides, Houghton Mifflin Harcourt.

Samuelson, L.J. and M.E. Hogan, 2006, Forest Trees: A Guide to the Eastern United States, Pearson Prentice Hall, Pearson Education, NJ, USA.

Weakley, A.S, J.C. Ludwig, J.F. Townsend. 2012. Flora of Virginia, Botanical Research Institute of Texas, 1572 p.

A "Rite in the Rain" 8 ½ by 11 spiral bound yellow field notebook is **required** for the course. Pencils are required for filling out lab quiz sheets due to readability in the rain. Also required are blank pieces of white paper for sketches to include in notebook.

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Please feel free to bring in additional tree identification guides to labs. Other useful materials include a 10X magnifying lens, a pocket knife for cutting twigs and bark, a comfortable pair of boots, insect repellent, rain gear, and a good winter coat.

Course Description

Collection, identification, and study of native and introduced woody plants in summer and winter conditions. *Prerequisite: BIOL 149 and BIOL 161: You must check with the instructor if you do not satisfy the prerequisite otherwise, you will be dropped from the course.*

Dendrology is the study of woody plants. The laboratory section of the course will focus on taxonomy, nomenclature, and morphology. The lecture section of the course will focus on forest ecology and specific species and family characteristics.

Course Objectives:

Communication Standards:

- **Writing Intensive:** you will have several tasks and assignments that are focused on writing and resulting in writing 5 pages or 2,000 words of text per week. **Task 1:** Species description sheets where using an online platform you will research, report, and properly cite information for each species. **Task 3:** You will incorporate technical terminology and precision to write an index dichotomous key for several species. **Task 4:** You will create a lab notebook describing the species in the field. **Task 5:** Exams will be writing intensive to answer critical thinking questions. Your writing will be peer-evaluated, revised, and evaluated by the instructor.
- **Reading Intensive:** you will be required to read 20 pages of text per week. There will be required textbook reading and several online reading assignments. Evaluation of reading will occur through lecture exams.
- **Oral Communication:** weekly you will orally present information to the lab about a particular species. **Task 2:** Species field presentations will be graded on criteria established by Toastmasters International.

Disciplinary Standards:

Biology Core Concepts:

- “Structure & Function: basic units of structure define the function of all living things.
- Systems: living systems are interconnected and interacting in systematic ways.

Biology Competencies:

- Ability to tap into the interdisciplinary nature of science: Biology is an interdisciplinary science.
- Ability to understand the relationship between science and society: Biology is conducted in a societal context” (Brewer et al 2011).

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Ethnobiology Core Concepts:

- “Connections: all living things are connected, both to each other and their environments
- Diversity: having or consisting of different elements or qualities
- Change: all things change in space & time.”

Ethnobiology Competencies:

- Taxonomy (Scientific & Folk): botanical or other organismal identification skills
- Understanding of botanical knowledge, biology core concepts (McClatchey et al. 2013).

Learning Objectives, Tasks, & Assessments:

Competency	Learning Objective	Task	Assessment
Biology: Structure & Function Ethnobiology: Diversity (taxonomy)	LO 1: <i>inventory</i> of a species including nomenclature, morphology, and ecological characteristics (analysis) and <i>construction</i> of a written species description online including correct terminology and references (synthesis)	Task 1: Written wiki species descriptions, assignment described below.	Assessment 1: Rubric for written species descriptions
	LO 2: <i>determination, justification,</i> and <i>validation</i> of a species identity in the field through oral presentation (evaluation)	Task 2: Oral species field presentations	Assessment 2: Rubric for species field presentations (Toastmasters International)
	LO 3: <i>compare</i> known species and efficiently <i>differentiate</i> them using specific characters, correct terminology, and an indexed key (evaluation, analysis)	Task 3: Creation of unique dichotomous keys for groups of species	Assessment 3: Rubric for dichotomous keys & keying out an unknown species during the lab midterm & final exam
Biology: Systems (interdisciplinary & society) Ethnobiology: Connections & Change	LO 4: to <i>identify, name,</i> and <i>describe</i> woody plant species common in western Maryland including their conservation, native status, wildlife, medicinal, & edible uses (knowledge)	Task 4: Completing in the field matrix sheet, completing & reviewing prior to lab: lab notebook, StudyBlue flashcards, Facebook, and online quizzes	Assessment 4: Field quizzes, lab midterm, lab final & lab notebook
	LO 5: <i>distinguishing</i> two similar species within the same genus; and <i>comparing</i> and <i>contrasting</i> similarities and differences between two distinct families within the same order based on niche & ecotype (analysis)	Task 5: Reviewing online & in person lectures, reading the textbooks, & completing tasks 1-4.	Assessment 5: Lecture exams & final exam

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Grading Policies

Grades will only be discussed in-person during office hours or scheduled appointments. Please feel free to come by my office for clarification of your grade. Grades will not be discussed via email.

Letter grades will be based on a 1000-point scale:

Neither CS nor NC are options for this course.

Late and incomplete assignments will not be accepted. Missing assignments will result in a failing grade for that particular assignment.

Final grades will be determined by a 1000 point system. Assignments include: species descriptions (online & in lab), field quizzes, midterm lab quiz, a final lab quiz, two in class exams, a comprehensive final, dichotomous keys, and a field notebook.

Letter Grade	Point Ranges	Grade Point Value
A	900.00 – 1000	4.000
B	800.00 – 899.99	3.000
C	700.00 – 799.99	2.000
D	600.00 – 699.99	1.000
F	0 – 599.99	0.000

Task	Category	Weight by % of grade	Point Value
1 & 2	Species Descriptions and Field Presentations	10%	100 points 12 species descriptions via Wiki: 4 pts. each (48 pts) 11 field species presentations: 5.2 pts. each (52 pts.) <i>lowest score dropped, no presentation first week or midterm week</i>
3	Dichotomous Keys	5%	50 points 10 keys, 5 pts. each
4	Field Quizzes	40%	400 points 11 daily field quizzes, 40 points each, <i>lowest score dropped, no field quiz the first week or midterm week</i>
	Lab Midterm	10%	100 points
	Lab Final	10%	100 points
	Lab Notebook	5%	50 points, 10 lab descriptions, 5 points each
5	Lecture Exams	10%	100 points 2 exams, 50 points each
	Final Exam	10%	100 points

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	Total	100%	1000 points
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This is a 300-level college course and expectations are appropriately high and related to rigorous quizzes, tests, and assignments. The approximate grade distribution for this level of a course on this topic with this instructor is 5% As, 25% Bs, 40% Cs, 25% Ds, and 5% Fs. An A is an exceptional grade and C is an average grade.

Tasks 1 & 2: Species Description: 100 points, 10%

Species descriptions are required for each lab period and are broken into two parts: written species descriptions online via wiki and in the field species presentation.

Online Species Descriptions via wiki: The week before the lab, in lab or lecture, you will receive the species list for the following lab. Your name will be randomly assigned to a particular tree species. *Prior to the lecture period*, by 2 pm, you will enter the information for your species online on the blackboard course wiki. During lab you will present the information about your species. Each species description via wiki is worth 4 points. There will be 12 species descriptions for 48 points total. Two species descriptions will be due the first week. A species description is not due midterm week.

In Field Species Presentations: There will be a total of 11 in field species presentations (FP) worth 5.2 points each. You will not have a field species presentation during the first week or during the midterm. Your lowest presentation score (or an absence) will be dropped. The 10 presentations will be worth 52 points total.

Species presentations will be worth a total of 100 points or 10% of your final grade. Late and incomplete assignments will not be accepted.

Task 3 (5%, 50 points):

Dichotomous Keys

Throughout the semester you will be assigned dichotomous keys. A total of 10 keys will be given worth 5 points each for a total of 50 points or 5% of your final grade.

Please note: these keys are should be completed on your own.

Task 4 (65%, 650 points):

Field Quizzes (FQ): 400 points, 40%

The laboratory portion of this course is designed to provide you with field opportunities to learn tree species. The first part of the lab is a daily field quiz over the trees covered in *any* previous laboratory. The second part of the lab is the presentation and identification of new trees. There will be a total of approximately 11 daily lab quizzes (40 points each or 4%). Daily lab quizzes will consist of

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approximately 10 trees. If you are tardy to lab you will receive a zero on the quiz. If you take the quiz and leave lab early, you will receive a zero on the quiz. There will be no make-up on the quizzes.

The lowest two grades of the daily quizzes will be dropped at the end of the semester. If you are absent once this one zero will be dropped. If you are never absent this will be your lowest scoring quiz. The average of the remaining lab quizzes, approximately **10** quizzes is worth **400 points or 40%** of your final course grade. Grading rubric are included below.

Lab Midterm: 100 points, 10%

A midterm quiz will consist of approximately 50 trees and will be worth **100 points or 10%** of your final course grade. The midterm cannot be dropped and there will be no make-ups.

Lab Final: 100 points, 10%

A final quiz will consist of approximately 150 trees and will be worth **100 points or 10%** of your final course grade. The final cannot be dropped and there will be no make-ups.

Note for each quiz only knowing the common name will result in a grade of 20%. Knowing identification *and* common name, scientific name, family, and native status are **required** to pass this course.

Laboratory Notebook: 50 points, 5%

Throughout the semester your laboratory notebook will be collected and graded. The laboratory notebook must include information the lab and about each tree species that we identify in lab including sketches of the specimen, site location, general characteristics listed below including leaf arrangement, attachment, complexity, margin, apex, base (e.g. opposite, alternate, simple, lobed, entire, cordate, acute, etc.), and *at least 1 unique identifying characteristic that separates the species from others*. Sketches can be completed on other paper and attached as an appendix or throughout the notebook, sketches are required. Lab notebooks are due Oct. 8th and after the lab final. A grading rubric is provided below.

Task 5 Lecture Exams: (20%, 200 points)

Exams: 100 points, 10%

Two exams based on assigned readings, lecture notes, and laboratory notes will be given throughout the semester. Exams will include materials covered in quizzes, matrixes, and dichotomous keys for plant identification. Exams will account for a total of 100 points or 10% of the final grade. Exams will occur on Oct. 7 and Nov. 11.

Final Exam: 100 points, 10%

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A cumulative final exam will be given in this course and will cover all material from laboratories and lectures. The exam will account for 100 points or 10% of the final grade. The final examination will occur on Monday, December 16th from 11:15 am until 1:45 pm in Compton 226. You are required to come to the final by 11:15 am or you will be unable to complete the final exam.

Exam	Date	Percent	Points
Exam 1	Oct. 7	5 %	50
Exam 2	Nov. 11	5 %	50
Final Exam	Dec. 16	10 %	100
Total		20 %	200

In lecture Pop-Quizzes

In lecture we will occasionally have pop-quizzes. These quizzes will typically be multiple choice over scientific names or family characteristics. They may also be over online materials or reading materials for the following lab. They will give given via Scantron or IFAT forms. These quizzes will be for *bonus* points only and will be added to your next exam as extra credit. This is one extra benefit of attending and being prepared for lecture.

Attendance and Participation

Attendance and active involvement in lectures and labs is expected. Be sure to read all assignments and be prepared to summarize the material. One unexcused absence will not impact your grade. Two unexcused absences in lecture and/or lab will lower your final average by one letter grade. Three unexcused absences in lecture and/or lab will lower your final average by two letter grades, four by three, etc. An absence includes leaving lab early or immediately following the lab quiz. Tardiness will not be permitted and will result in being left during fieldtrips. If a student is participating in co- and extracurricular activities, or has an excused absence, I must be notified within one week to arrange make-up assignments.

Absence in Lab or Lecture	Percent	Points
One	-	-
Two	-10 %	-100
Three	-20 %	-200
Four	-30 %	-300

Confidentiality Statement

Faculty and staff in the state of Maryland at USM institutions (including Frostburg State University) are obligated to follow the State's reporting requirements for suspected child abuse or neglect. Mandated reporters are persons who, in the course of their work, may be privy to information that they are required to report to the appropriate enforcement agency. Faculty and staff are mandated reporters, and

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must report any disclosure of suspected incidents of child abuse and neglect, including child sexual abuse, whether or not the suspected incident was previously reported. Incidences must be reported even if they learn about the maltreatment for the first time from an adult victim who was under the age of 18 when the incident occurred. Therefore, any disclosure written or verbal) by students or prospective students of suspected incidents of child abuse and/or neglect will be immediately reported to the appropriate authorities.

Materials for introduction & review

There are several aspects of this course which are provided for as means of introduction of material and material review. This includes interactive games in the classroom and in travel to the field locations.

Matrix: For each lab you will receive a lab species matrix. The matrix is given to facilitate collecting information in a field setting and as a study aid. Matrixes will help you make connections about characteristics which are specific for families, genera, and species. Matrixes will not be graded.

Blackboard species quizzes: For many labs there are online species quizzes with plant images and locations to put in scientific names, families, and additional information. These are not graded and are solely for review. You may take the quizzes many times.

Facebook: There is a Facebook Page for the Dendrology Lab. You do not have to be my friend to like the Facebook Page. The page is available to upload photos and for review of information.

StudyBlue online flashcards: There is a flashcard site for Dendrology on StudyBlue. This program is free and also has a mobile app. <http://www.studyblue.com/>

Inclement Weather

Labs and courses will be cancelled only if FSU is officially closed for the entire period of the course. If there is a delay until 9am the lab will begin at 9am. If there is a delay until 10am the lab will begin at 10am. If there is a delay until 11am the lab will begin at 11am. Even if courses and labs are canceled digital assignments are still due and additional assignments may be provided online. Be prepared to attend labs outside in rain, snow, and cold. Be prepared to encounter mud, poison ivy, ticks, bees and other elements of nature. We will spend the entire 4 hours without access to bathrooms. Please contact me with questions about restroom etiquette in the great outdoors. You must notify the instructor during the first week of class if you are allergic to bees or have never been stung by a bee.

Extra Credit Opportunities

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Biology Seminar Series

Students are strongly encouraged to participate in the upcoming Biology Seminar Series, graduate defenses, and talks presented by the Western Maryland Native Plant Society. Students will receive 1 point of extra credit towards an exam grade for each 1-hour seminar they attend. Please see me after the seminar to make sure that I have your name on the list.

E=(LG)² Environmental Magazine

Students are strongly encouraged to prepare submit an article for Frostburg State University's Environmental Magazine E=(LG)². Students will receive 5 points of extra credit towards their lowest exam grade if they submit an article published in the environmental magazine during the current semester.

Maryland Native Plant Society Meeting, Sept. 21-22, Lyric Building

Students who participate in the Saturday presentations & fieldtrips and the Sunday fieldtrips will receive 10 points of extra credit on the next exam.

Registration is available online: <http://mdflora.org/fallconference.html> Don't miss this wonderful opportunity to meet future employers.

Western Maryland Native Plant Society Meeting, Oct. 15, 7pm, Appalachian Laboratory

The Western Maryland Chapter of the Maryland Native Plant Society presents Mitch Hall, a graduate student in Applied Ecology and Conservation Biology. Mitch will be presenting on urban forestry. Students attending this presentation will receive 3 bonus points on their next exam.

Class Policies

There will be no cell phones on the desk or in class or lab. There will be no use of laptops unless prior consent is obtained for special circumstances. You may not eat food or use tobacco products in class or labs, even outside labs. You may not travel in your personal vehicle to lab locations or meet the class at the location, unless you receive specific permission.

Question: Did you grow up with a favorite tree in your front yard at home? If so, what species was your favorite tree?

Academic honesty and misbehavior

The statement on academic dishonesty in the Pathfinder is in effect. Cheating in any capacity in this course will not be tolerated. If cheating or plagiarism is encountered, the instructor may administer a grade of zero or an F in the class depending on the severity of the incident. Students are expected to abide by the University's Code of Student Conduct and disruptive behavior in the classroom may result in an administrative withdraw.

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During outside field quizzes students should only have quiz sheets on a clear clipboard, if caught with additional material in hand, regardless of your intent or use, during a quiz the student will receive an F on the quiz.

Modification of exam material is considered cheating. If you move or manipulate the herbarium specimens you will receive an F on the midterm or final exam.

Accommodations for students with disabilities

Frostburg State University is committed to providing equal educational opportunities for students with documented disabilities. Students who require disability services or reasonable accommodations must identify themselves as having a disability and provide current diagnostic documentation to Disability Support Services. All information is confidential. Please call 4483 or visit 150 Pullen Hall for more information. If you are unable to participate in hiking during labs you must inform the instructor during the first week of class.

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DENDROLOGY Lecture Schedule

For all labs the required reading is the section in each book about the new species that were learned in the previous lab. This information will be included on quizzes and exams. Online species descriptions have been abbreviated Wiki, dichotomous keys have been abbreviated as DiKey

#	Date	Description	Families	Assignments
1	Sept. 2		<i>NO CLASS: Labor Day</i>	
2	Sept. 9	Site	Sapindaceae, Anacardiaceae, Caesalpiniaceae, Cornaceae	Wiki lab 1&2 DiKey1
3	Sept. 16	Riparian	Betulaceae, Fabaceae, Fagaceae, Hamamelidaceae	Wiki lab 3 DiKey2
4	Sept. 23	HCVF	Ebenaceae, Elaeagnaceae, Lauraceae, Magnoliaceae, Oleaceae, Tiliaceae	Wiki lab 4 DiKey3
5	Sept. 30	Exotics	Caprifoliaceae, Celastraceae, Juglandaceae, Rosaceae, Rubiaceae, Rutaceae, Simaroubaceae	Wiki lab 5 DiKey4
6	Oct. 7	----		Exam 1
7	Oct. 14	Recreation	Aquifoliaceae, Ericaceae, Salicaceae, Pinaceae	Wiki lab 6 DiKey5
	Oct. 15		<i>Last day to withdraw from the course</i>	
8	Oct. 21	History	Araliaceae, Cupressaceae, Ginkgoaceae, Platanaceae	Wiki lab 7 DiKey6
9	Oct. 28	Urban Forestry	Bignoniaceae, Pinaceae, Taxaceae	Wiki lab 8 DiKey7
10	Nov. 4	Silviculture	Mimosaceae, Moraceae, Scrophulariaceae	Wiki lab 9 DiKey8
11	Nov. 11	Reproduction		EXAM 2
12	Nov. 18	Winter ID	Ulmaceae, Winter ID	Wiki lab 10 DiKey9
13	Nov. 25	Forest Ecology		
14	Dec. 2	Western US	Western Species	Wiki lab 11 DiKey10
15	Dec. 9		Review for Final Exam	Wiki lab 12
16	Dec. 16		FINAL EXAM 11:15 am-1:45 pm, Compton 226 <i>You must arrive at the final by 11:15am</i>	

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DENDROLOGY Laboratory Schedule

For all labs the required assignment is the species description for your particular assigned species. This information may be included on quizzes and exams.

Locations are *tentative* and are subject to change, please meet in lab with class, and do not attempt to arrive on your own. FQ= field quiz, FP= field species presentation

#	Date	Lab	Location	Theme	Assignment
1	Sept. 3 or 5	1	Lab and Arboretum	Identification	
2	Sept. 10 or 12	2	Green Ridge State Forest 15 mile creek	Site	FQ 1, FP 1
3	Sept. 17 or 19	3	Savage River State Forest: Whiskey Hollow	Riparian	FQ 2, FP 2
4	Sept. 24 or 26	4	Finzel Swamp: The Nature Conservancy	HCVF	FQ 3, FP 3
5	Oct. 1 or 3	5	Arboretum 2 & Midterm Review	Exotics	FQ 4, FP 4
6	Oct. 8 or 10		<i>TBD</i>		Midterm
	Oct. 15		<i>Last day to withdraw</i>		
7	Oct. 15 or 17 <i>(Deer Muzzleloader)</i>	6	Dan's Mnt. State Park	Recreation	FQ 5, FP 5
8	Oct. 22 or 24 <i>(Bear Season)</i>	7	New Germany State Park	History	FQ 6, FP 6
9	Oct. 29 or 31 <i>(Turkey)</i>	8	Constitution Park	Urban Forestry	FQ 7, FP 7
10	Nov. 5 or 7	9	Evergreen	Silviculture	FQ 8, FP 8
11	Nov. 12 or 14	10	Fruit	Reproduction	FQ 9, FP 9
12	Nov. 19 or 21	11	Bark	Winter ID	FQ 10, FP10
13	Nov. 26 or 28		<i>No lab: Thanksgiving</i>		
14	Dec. 3 or 5 <i>(Deer Firearms)</i>	12	Western species I & Final exam review: in Lab	Western US	FQ 11, FP 11
15	Dec. 10 or 12		In lab		Lab Final

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Week	Assignment	Due Date	%	Points	Grade
2	Dichotomous Key 1	Sept. 9	0.5	5	
	Wiki lab 1		0.4	4	
	Wiki lab 2		0.4	4	
	Field Quiz 1	Sept. 10 or 12	4.0	40	
	Field Presentation 1		0.5	5	
3	Dichotomous Key 2	Sept. 16	0.5	5	
	Wiki lab 3		0.4	4	
	Field Quiz 2	Sept. 17 or 19	4.0	40	
	Field Presentation 2		0.5	5	
4	Dichotomous Key 3	Sept. 23	0.5	5	
	Wiki lab 4		0.4	4	
	Field Quiz 3	Sept. 24 or 26	4.0	40	
	Field Presentation 3		0.5	5	
5	Dichotomous Key 4	Sept. 30	0.5	5	
	Wiki Lab 5		0.4	4	
	Field Quiz 4	Oct. 1 or 3	4.0	40	
	Field Presentation 4		0.5	5	
6	Exam 1	Oct. 7	5.0	50	
	Lab Notebook 1	Oct. 8 or 10	2.5	25	
	Lab Midterm		10.0	100	
7	Dichotomous Key 5	Oct. 14	0.5	5	
	Wiki Lab 6		0.4	4	
	Field Quiz 5	Oct. 15 or 17	4.0	40	
	Field Presentation 5		0.5	5	
8	Dichotomous Key 6	Oct. 21	0.5	5	
	Wiki Lab 7		0.4	4	
	Field Quiz 6	Oct. 22 or 23	4.0	40	
	Field Presentation 6		0.5	5	
9	Dichotomous Key 7	Oct. 28	0.5	5	
	Wiki Lab 8		0.4	4	
	Field Quiz 7	Oct. 29 or 31	4.0	40	
	Field Presentation 7		0.5	5	
10	Lab Notebook 2	Nov. 4	1.0	10	
	Wiki Lab 9		0.4	4	
	Field Quiz 8	Nov. 5 or 7	4.0	40	
	Field Presentation 8		0.5	5	
11	Exam 2	Nov. 11	5.0	50	
	Wiki Lab 10		0.4	4	
	Field Quiz 9	Nov. 12 or 14	4.0	40	
	Field Presentation 9		0.5	5	
12	Dichotomous Key 8	Nov. 18	0.5	5	
	Wiki Lab 11		0.4	4	
	Field Quiz 10	Nov. 19 or 21	4.0	40	
	Field Presentation 10		0.5	5	
14	Dichotomous Key 9	Dec. 2	0.5	5	
	Wiki Lab 12		0.4	4	
	Field Quiz 11	Dec. 3 or 5	4.0	40	
	Field Presentation 11		0.5	5	
15	Dichotomous Key 10	Dec. 9	0.5	5	
	Lab Final	Dec. 10 or 12	10.0	100	
	Lab Notebook 2 Final		2.5	25	
16	Lecture Final	Dec. 16	10.0	100	
	TOTAL		100	1000	

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Task 1: Description: Wiki Information:

Nomenclature:	Your name	Common name	Scientific name	Family
http://www.theplantlist.org/				
Classification:	Group	Duration	Habit	Native Status
http://plants.usda.gov/				
Leaf Characters:	Attachment	Arrangement	Complexity	Stipules/estipulate
<i>field guides</i>				
	Shape	Base	Apex	Margin
http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet				
	Venation	Upper-surface	Lower-surface	Additional traits
Fruit:	Monoecious/Dioecious	Pollination (wind/animal)	Fruit type	Fruit dispersal
http://www.fs.fed.us/database/feis/plants/shrub/toxspp/all.html				
Species Ecology:	Habitat	Host Plant	Ornamental	Wildlife
http://eol.org http://nativeplantcenter.net				
Species Status:	Wetland	Conservation	Medicinal	Poisonous/edible
http://natureserve.org , http://plants.usda.gov/ http://www.ars-grin.gov/duke/				

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Task 1 Example: Sample Wiki:

Nomenclature:	Your name	Common name	Scientific name	Family
http://www.theplantlist.org/	Sunshine Brosi	eastern poison-ivy	<i>Toxicodendron radicans</i> pronunciation	Anacardiaceae
Classification:	Group	Duration	Habit	Native Status
http://plants.usda.gov/core/profile?symbol=TORA2	Dicot	Perennial	Shrub Forb/herb Subshrub Vine	Native
Leaf Characters:	Attachment	Arrangement	Complexity	Stipules/estipulate
<i>field guides</i>	Petiolate, petioles densely pubescent	Alternate	compound, trifoliate (3)	estipulate
	Shape	Base	Apex	Margin
http://dendro.cnre.vt.edu/dendrology/syllabus/factsheet.cfm?ID=128	ovate	rounded	Acute to acuminate	unlobed, mild lobed with rounded or pointed lobes (irregular teeth), notched
	Venation	Upper-surface	Lower-surface	Additional traits
	Pinnate	Smooth, shiny		
Fruit:	Monoecious/Dioecious	Pollination (wind/animal)	Fruit type	Fruit dispersal
http://www.fs.fed.us/database/feis/plants/shrub/toxsp/all.html	Dioecious	Ants, bees, and wasps	grayish-white drupe	birds and mammals and sometimes by water
Species Ecology:	Habitat	Host Plant	Ornamental	Wildlife
eol.org, nativeplantcenter.net	everywhere	poison ivy sawfly, <i>Arge humeralis</i>	to keep people on trails :)	Moderate: large mammals, Low: small mammals & birds
Species Status:	Wetland	Conservation	Medicinal	Poisonous/edible
plants.usda.org,natureserve.org herb.umd.umich.edu ars-grin.gov/duke	FAC, FACU	Secure: G5 in the US	Bite(Snake) Cough Hypertrophy; Leprosy Narcotic Rheumatism Scabies Sedative Tattoo	Poisonous, poison arrows, good luck in gambling

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Task 1: Assessment 1: Wiki Grading Rubric:

Criteria	Levels of Achievement	
	Novice	Proficient
Nomenclature	0 Points Partial or Incorrect Information, Incorrect capitalization or italics	4 Points Common Name: Scientific Name: (link to pronunciation) Family:
Classification	0 Points Partial or Incorrect Information	4 Points Group Duration Habit Native Status
Leaf Description	0 Points Partial or Incorrect Information	12 Points Attachment Arrangement Complexity Stipules or estipulate Shape Base Apex Margin Venation Upper surface Lower surface Other notable traits
Fruit Description	0 Points Partial or Incorrect Information	4 Points Monoecious/Dioecious Animal or wind pollinated Fruit type Fruit dispersal
Species Ecology	0 Points Partial or Incorrect Information	8 Points Habitat Butterfly host plant Ornamental value Wildlife Value
Species Status	0 Points Partial or Incorrect Information	8 Points Wetland status Conservation status Medicinal Poisonous/edible

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Task 3: Assessment 3: Dichotomous Keys Rubric:

Criterion (Score 0 if element is absent)	Unacceptable (0)	Below Expectations (1)	Meets Expectations (2)	Score
Formatting	Inconsistent for indented key format	> 2 options	Uses indented key format (1 and 1') with only two options	
Accurate	> 1 incorrect categorization	1 incorrect categorization	Each species is correctly categorized	
Concise	>1 unnecessary lead, verb, or word	1 unnecessary lead, or 1 unnecessary verb or other word	All leads are related to a specific species with no unnecessary leads, no unnecessary words or verbs	
Clear distinctions	Distinctions are unclear	Overlapping or unclear qualitative traits (small/large) are used for separation	Precise & non-overlapping measurements are used to separate specific characters	
Construction	Statements begin with either differing subjects, verb is included, and include a negative	Statements begin with either differing subjects, verb is included, or include a negative	Correct order of subject first then character trait with verb implied, broad all-inclusive negatives are avoided	
			TOTAL (10 Points)	

Task 4, Assessment 4, Grading Rubric, Field Quiz, Lab Midterms, & Lab Final

Category	Points deducted for each infraction
Spelling (1-2 letters away)	1
Capitalization	
Not including * for exotics	
Incorrect common name	2
Incorrect family	
Incorrect genus	3
Incorrect specific epithet	

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Task 4, Assessment 4, Grading Rubric, Field Quiz, Lab Midterms, & Lab Final

Criterion		Unacceptable (0)	Below Expectations (1)	Meets Expectations (2)	Proficient (3)	Score
Common Name	Accuracy	Incorrect identification	One aspect of name incorrect, missing * on exotic species	Correctly identified	-	/2
	Spelling	> 2 letters away from correct spelling	1-2 letters away from correct spelling	Correct spelling	-	
	Capitalization	-	Incorrect capitalization	Correct capitalization	-	
Genus	Accuracy	Incorrect identification	-	-	Correctly identified	/3
	Spelling	> 2 letters away from correct spelling	-	1-2 letters away from correct spelling	Correct spelling	
	Capitalization	-	-	Incorrect capitalization	Correct capitalization	
Species	Accuracy	Incorrect identification	-	-	Correctly identified	/3
	Spelling	> 2 letters away from correct spelling	-	1-2 letters away from correct spelling	Correct spelling	
	Capitalization	-	-	Incorrect capitalization	Correct capitalization	
Family	Accuracy	Incorrect identification	-	Correctly identified	-	/2
	Spelling	> 2 letters away from correct spelling	1-2 letters away from correct spelling	Correct spelling	-	
	Capitalization	-	Incorrect capitalization	Correct capitalization	-	
TOTAL						/10

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Task 5: Laboratory Notebook Grading*Laboratory Notebook Grading:*

For each of the 10 labs the following general information is required, 5 pts. total for each lab period:

- Complete date (1 pt.)
- Correct location name (1 pt.)
- County, State (1 pt.)
- 2 general site characteristics: soils, elevation, moisture, distance to stream, aspect, topography, etc. (2 pts.)

For each species the following general information is required, 10 points total, 1 pt. each:

- Common name (1 pt.)
- Scientific name (1 pt.)
- Family (1 pt.)
- Leaf arrangement (1 pt.)
- Leaf attachment (1 pt.)
- Leaf complexity (1 pt.)
- Leaf margin (1 pt.)
- Leaf apex (1 pt.)
- Leaf base (1 pt.)
- *At least 1 identifying characteristic that separates the species from others* (1 pt.)

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