

ALLEGANY COLLEGE OF MARYLAND  
Cumberland, Maryland  
Spring 2007  
COURSE SYLLABUS  
(This is subject to modification by the Professor)

I. GENERAL INFORMATION

- A. Course - Biology 108 - Dendrology II
- B. Textbook
  1. Textbook of Dendrology, by William M. Harlow, James W. Hardin, and Fred M. White, 9th edition, New York, McGraw-Hill, Book Company, 1996
  2. Woody Plants of Maryland, by Russell G. Brown and Melvin L. Brown, 1st edition, Baltimore Maryland, Port City Press, 1972.
- C. Lecture Professor: Dr. James A. Howell (full-time faculty).
- D. Lecture meets from 9 to 9:50 a.m. on Monday, in room S-25 and laboratory meets on Tuesday and Thursday in room S-25 from 12:30 to 3:15 p.m.
- E. Faculty Office: Room S-52, Science Building.
- G. Faculty Office Hours: Monday, Wednesday, and Friday 12:00-1:00 p.m. Additional times may be arranged by contacting the faculty secretary, Science Division.
- H. Contact: Phone Number: 301-7845251  
Email: Jhowell@allegay.edu

II. PURPOSE

- A. Purpose of Course

A continuation of Dendrology I with greater emphasis placed on gymnosperms than angiosperms. Dendrology I included a taxonomic study of families, genera, and species of woody plants, with additional emphasis placed on those important in forestry and related fields. Forest communities, distributions, key usage, and field identification will be integral to this course.
- B. Biology 108 is a two credit course. One hour of lecture and three hours of laboratory. Biology 107 is the prerequisite to this course.
- C. Objectives
  1. To present a basic vocabulary for an understanding of trees and shrubs.
  2. To prepare the student for advanced study in Forestry and Field Botany.
  3. To familiarize the student with leaf, twig, flower, and bark characteristics of most of the woody Angiosperms peculiar to this area and to discuss similarities with related species that are not found in this part of the country.
  4. To continue to study the winter and spring characteristics of the angiosperms (including flowers).
  5. To familiarize the student with habitat and community characteristics of pertinent angiosperm and gymnosperm species.

6. To train the students in the use of plant keys so they are able to identify unknown species on their own.
  7. To develop habits and methods of biological investigation.
- D. After successful completion of Biology 108 a student should be able to:
1. Communicate using basic dendrological vocabulary.
  2. Identify the general characteristics of most of the woody Angiosperms and Gymnosperms peculiar to this area and to discuss their similarities with related species that are not found in this part of the country.
  3. Discuss and be familiar with some of the habitats and community characteristics of pertinent angiosperm and gymnosperm species.
  4. Be introduced to and be familiar with the usage of plant keys so they can learn to identify unknown species on their own.
  5. Be familiar with winter and spring characteristics (including flowers) of selected woody angiosperms.
  6. Discuss the habits and methods of introductory biological investigation.
  7. To identify selected angiosperm and gymnosperm species from outside this area.
- E. Main areas of concentration
1. Identification of most woody angiosperms and gymnosperms in this area.
  2. Habitats.
  3. Characteristics of phyla, classes, families, and genera.
  4. General information for the more common species.
  5. The more common forest communities.
- III. COURSE POLICIES
- A. Attendance
1. To attend lecture and laboratory classes regularly. Each unexcused absence may reduce the final grade by one.
  2. To attend all classes on time. If you are late twice it will count as one unexcused absence.
  3. If a student is 20 minutes late, leaves, or misses at least 20 minutes during a laboratory, the lab will be counted as an absence.
  4. If school opening is delayed, affected laboratories are canceled.
  5. Some assignments may require the student's presence at times other than the regularly scheduled class times.
- Academic Regulations Policy on Attendance
6. a. Students are required to attend every class session except in cases of emergency or illness.
  - b. Students usually cannot make up absences; however, permission to make up absences will be granted only at the instructor's discretion.
  - c. Students must notify their instructors as to the reasons for an

absence from a class session. The instructor may require such evidence as he/she sees fit to justify an absence. Unexcused absences may adversely affect a student's grade in a course.

- d. When a student's absences endanger his/her progress in a course in the judgement of the instructor, the instructor may drop the student from the class roster.
- e. If an instructor does not appear in class within ten minutes after the scheduled starting time, representative of the class should attempt to locate the instructor by these means, students may consider the class canceled.

Attendance policy as listed in the Allegany  
College Catalog

7. a. When the number of a student's absences is such that the instructor believes that the student cannot successfully

complete

the course in the time remaining the instructor may drop the student from the class roll. If the student is dropped after the drop/add cutoff date, a grade of "F" will be recorded. If the student has registered in an audit status and does not attend

2/3

of remaining classes, a grade of "W" will be recorded.

B. Participation

1. To read all assignments in advance and be able to take part in classroom discussions.
2. To take legible notes.
3. To be able to use all scientific terms, laws, principles, and theories, both oral and written with correct spelling.
4. To complete and record the required information for all laboratory exercises.
5. To complete and record the required information for all laboratory exercises.
6. To satisfactorily obtain the assigned information and apply it to everyday happenings.
7. To collect, identify, and dry preserve all species of woody plants found during this semester. Each specimen will consist of a twig with four or more attached leaves. In the case of gymnosperms, there may be many leaves attached to the twig or if they fall off during drying they will be stored in paper pouches. At least ten of these specimens will be mounted and added to the collection which is to be turned in at the 12th laboratory. The professor will inform the student which of the collected specimens will be mounted in the 11th laboratory. Students are required to bring their entire collection to this laboratory. These specimens are to be arranged phylogenetically.

The easy way to do this is to look up in your Woody Plants of Maryland book and write the page number, where this species is found, on the specimen cover sheet. This should be done after each field trip and the specimens then arranged phylogenetically. In addition, a specimen label should be attached to the lower right-hand corner of the specimen cover sheet. This label is to contain the same information as is found on each of the 90% test specimens. NOTE: IF THE COLLECTION IS NOT BROUGHT TO THE REQUIRED LABORATORY THE STUDENT WILL BE ASSESSED A 50% PENALTY ON THEIR HIGHEST FIELD TEST SCORE AND THIS TEST WILL NOT BE DROPPED AS A LOW FIELD TEST SCORE.

8. THE STUDENT MUST SCORE 90% ON AN IDENTIFICATION OF MAJOR TIMBER SPECIES TEST IN ORDER TO GET A SEMESTER GRADE OF "C" OR BETTER IN THIS CLASS. LIST OF THE REQUIRED TIMBER SPECIES IS ATTACHED TO THE END OF THIS SYLLABUS.
9. Students must keep cell phones turned off at all times. continued abuse of this policy may result in the student being dismissed from the class.

C. Student Evaluation

1. Final grades will be computed on the following basis:
  - A. Lecture Average.....50%
  - B. Laboratory Average.....50%
2. The lecture average is based on three tests. Each lecture test will consist of 75-150 fill-in-the-blank questions and will be worth equal value.
3. The laboratory evaluation will be based on:
  - A. Three-Four field identification tests.  
Where possible all tests will be in the field and are cumulative in nature. Students will be held accountable for species from the Fall Semester.
  - B. Two wall tests (each equivalent in value to a field test).
  - C. A 90% test (the first score is used and is equivalent in value to a field test).
  - D. Final Exam (equivalent to two field tests). This test will consist of two parts. Part one will be based on species from both semesters and will have 40-50 specimens to identify in the field. Part two will include keying out 3-5 specimens.
4. Missed tests:
  - a. 1. A student is required to notify the professor prior to an exam that it

will be impossible for him/her to take the test as scheduled. Without this notification a zero will be recorded for the exam and the student will not be permitted to take a makeup exam.

2. A student is required to make arrangements for making up all missed tests the day upon returning from an absence and is required to make up test(s) within two days of returning in order to avoid a zero on the test(s). A written doctor's excuse may be required before the student will be allowed a makeup test.
3. If a student is ill when a test is to be given he/she must inform the instructor of his/her condition prior to receiving a copy of the test. Once the student has received and/or taken a test no allowance will be made for illness.

- b. All makeup lecture tests will normally be given during the first two day following the return to school. A 10% penalty for lateness may be required.
- c. Makeup tests are generally composed of essay and/or short answer questions.
- d. It is the instructors decision as to whether an absence is excused or unexcused.
- e. Missed laboratories generally cannot be made up.

D. Grading Scale

A = 90-100%

B = 80-89%

C = 70-79%

D = 60-69%

F = 59% and below

E. Extra Credit

Opportunity for extra credit will be discussed by the professor. There will be no extra credit or bonuses given in the laboratory portion of this course unless given by the lecture professor.

- F. Tutoring and/or Extra Help Sessions
1. The professor will aid the students in obtaining tutoring service. This may be initiated by either the professor or the student.
  2. Tutoring services are provided free of charge to those students who are having difficulty with their coursework. There is a \$10 per semester application fee. Students who desire to be helped/tutored should come to the Coordinator of Testing and Tutoring in the Humanities Building, Rooms H-22 and H-23 to make arrangements. All tutors for the coursework are approved by the respective faculty member. The tutoring room is located in the Humanities Building and the room provides a comfortable atmosphere in which to study.
  3. Special review sessions may be arranged at times other than during formal classes, when either the professor or students feel that it would be helpful.
- G. Acceptable Assignment Conditions
1. All outside written assignments are to be typed.
  2. Answers to test questions are to be printed in black ink or #2 pencil as indicated by the instructor.
- H. Completion of Assignments
1. In order to receive full credit, assignments must be completed on time as announced either in class or in this syllabus.
- I. The "X" Grade
1. An "X" grade will be given only, when in the opinion of the professor, a student fails to satisfactorily complete all assignments even though they worked to the maximum of his/her potential or in the case of a prolonged illness.
  2. An "X" grade will not be given to allow a student to avoid a "D" or "F" in the course.
  3. The student must present the lecture professor with a written request one week prior to the final test.

4. The lecture professor will inform the student if an "X" will be granted prior to the final test.

J. Cheating and/or Plagiarism

1. Cheating, in any form, will not be tolerated in this class.
2. Students observed, or otherwise determined to be cheating, will be dealt with severely and immediately according to the Policy regarding Student Cheating as stated in the Allegany College Student Handbook.

K. Laboratory Safety

1. Expectant mothers are strongly encouraged to confer with their physician prior to engaging in the laboratory phase of this course. If pregnancy should occur during the semester, consultation with the physician is also recommended.
2. All expectant mothers should inform the laboratory instructor so that proper precautions may be exercised.
3. Students are required to report all accidents, regardless of how minor they may appear to be, to the professor immediately.
4. As this course has many outside laboratories, students should be prepared for all types of weather and dress accordingly.
5. MSDS data sheets are available to students.
6. Students will be required to sign a statement of release form to participate in the outdoor laboratories.
7. Students should always take care when chance encounters with animals, such as snakes, take place.

L. Laboratory Breakage

1. Students are required to pay all damage that they incur on laboratory materials and equipment, such as slides, glassware, microscopes, etc.
2. All damaged laboratory material must be paid for prior to the release of semester grades.
3. Students are assessed a \$50.00 equipment fee in addition to the laboratory fee. This fee will be returned when the plant press and vasculum are

returned.

#### IV. BIBLIOGRAPHY

##### A. Required texts and laboratory manuals:

1. Lecture
  - a. Textbook of Dendrology, William M. Harlow, Ellwood S. Harrar, Ellwood S. Harrar, James W. Hardin, and Fred M. White, 8th Edition, New York, McGraw Hill Book Company, 1991.
  - b. Woody Plants of Maryland, Russell G. Brown, and Melvin L. Brown, 1st Edition, Baltimore, Maryland, Port City Press, 1972.

##### B. SUPPLEMENTAL OR RECOMMENDED PERIODICALS FOR REFERENCE

1. American Forests by the American Forestry Association
2. American Journal of Botany
3. Economic Botany
4. Journal of Forestry
5. National Geographic
6. Natural History
7. Science
8. Science News
9. Scientific American
10. Southern Lumberman

##### C. SUPPLEMENTAL BOOKS FOR REFERENCE

1. Flora of West Virginia, Earl L. Core and P.D. Strausbaugh, 1st Edition, West Virginia Press, 1967,
2. Gray's Manual of Botany, Merrit Lyndon Fernald, 8th Edition, 1950.
3. Illustrated Flora of the Northeastern United States and Adjacent Canada. The New Britton and Brown, Henry Gleason, Volumes 1,2, and 3 1968.

Biology 108  
Tentative Lecture Schedule  
Spring 2007

<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Chapter Reading Assignment</u>
1	1/22	Course Introduction & Betulaceae	9(361-375)
2	1/29	Tiliaceae	9(379-383)
3	2/5	The Legumes	9(415-425)
4	2/12	FIRST TEST	
5	2/19	Oleaceae, Bignoniaceae & Pinophyta	9(469-482) 8(97-103)
6	2/26	Pinophyta Characteristics	8(97-103)
7	3/5	SECOND TEST	
8	3/12	Pinaceae (genus Pinus)	8(104-157)
	3/19	MIDTERM GRADES DUE	
	3/19-3/23	SPRING RECESS;NO CLASSES	
9	3/26	Pinaceae (genus Pinus)	8(104-157)
10	4/2	Pinaceae (genus Pinus)	8(104-157)
	4/5-4/6	COLLEGE CLOSED: EASTER BREAK	
11	4/9	(Larix & Picea)	8(157-177)
12	4/16	Pinaceae (Pseudotsuga, Tsuga, & Abies)	8(177-209)

<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Chapter Reading Assignment</u>
13	4/23	Cupressaceae (Sequoia, Sequoiadendron, Taxodium, & Thuja)	8(209-228)
14	4/30	Cupressaceae (Thuja, Chaemacyparis, & Juniperus)	8(224-242)
15	5/7	THIRD TEST	

Biology 108  
Tentative Laboratory Schedule  
Spring 2007

<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Reading Assignments</u>
1	1/18 & 1/23	Lecture: Salicaceae, Ericaceae, Ebenaceae, & Rosaceae	9(384-415)
2	1/25 & 1/30	Cornaceae, Aquifoliaceae, Hippocastanaceae, & Aceraceae	9(426-459)
3	2/1 & 2/6	Anacardiaceae, Simaroubaceae, Rutaceae, & Araliaceae Or Wall Test specimens	9(459-469)
4	2/8 & 2/13	Wall Test specimens &/or Twig Exercise	
5	2/15 & 2/20	Field trip on campus for collection of gymnosperms.	
6	2/22 & 2/27	*Field trip to Fort Frederick for the collection of gymnosperms.	
7	3/1 & 3/6	*Field trip off campus for FIELD TEST and collection of conifers.	
8	3/8 & 3/13	WALL TEST #1. Use of gymnosperm key in class.	
9	3/15 & 3/27	*Field trip to Frostburg watershed for winter characteristics.	
10	3/29 & 4/3	*SECOND FIELD TEST. Field trip off campus to observe flowering, gymnosperm, and winter characteristics.	

<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Chapter Reading Assignments</u>
11	4/12 & 4/10	MOUNTING OF LEAF COLLECTION. STUDENTS ARE REQUIRED TO BRING THEIR ENTIRE COLLECTION TO CLASS. THEY ARE TO BE ARRANGED IN PHYLOGENETICALLY AND HAVE ALL APPROPRIATE LABELS. WALL TEST #2 & Keying exercises	
12	4/19 & 4/17	SPECIMEN COLLECTIONS ARE TURNED IN AT THE BEGINNING OF CLASS. 90& TEST & Keying exercises.	
13	4/26 & 4/24	ON ONE OF THESE DAYS ALL STUDENTS WILL PARTICIPATE IN AN ALL DAY FIELD TRIP to Dr. Melvin Brown's Arboretum and the West Virginia University Arboretum in Morgantown. No student will be excused from this laboratory. *THIRD FIELD TEST	
14	5/3 & 5/1	POTENTIAL FOURTH FIELD TEST	
15	5/10 & 5/8	FINAL LABORATORY EXAMINATION. INCLUDES *FIELD TRIP (SIGHT IDENTIFICATION OF 40-50 WOODY SPECIMENS IN THEIR NATURAL HABITAT, CAN INCLUDE ANY PLANT THAT WE COLLECTED DURING THE ENTIRE YEAR) AND KEYING QUESTIONS. **ALL STUDENTS WILL PARTICIPATE ON 5/8.	

\*Field trips off campus.

SPRING WALL TEST

<u>Common name</u>	<u>Scientific Name</u>	<u>Family</u>
1. Lodgepole Pine	<i>Pinus contorta</i>	Pinaceae
2. Jeffrey Pine	<i>Pinus jeffreyii</i>	Pinaceae
3. Knobcone Pine	<i>Pinus attenuata</i>	Pinaceae
4. Ponderosa Pine	<i>Pinus ponderosa</i>	Pinaceae
5. Western White Pine	<i>Pinus monticola</i>	Pinaceae
6. Whitebark Pine	<i>Pinus albicaulis</i>	Pinaceae
7. Limber Pine	<i>Pinus flexilis</i>	Pinaceae
8. Sugar Pine	<i>Pinus lambertiana</i>	Pinaceae
9. Bristlecone Pine	<i>Pinus aristata</i>	Pinaceae
10. Pinyon Pine	<i>Pinus edulis</i>	Pinaceae
11. Digger Pine	<i>Pinus sabiniana</i>	Pinaceae
12. Apache Pine	<i>Pinus engelmannii</i>	Pinaceae
13. Chihuahua Pine	<i>Pinus leiophylla</i> var. <i>chihuahuana</i>	Pinaceae
14. Western Larch	<i>Larix occidentalis</i>	Pinaceae
15. Subalpine Larch	<i>Larix lyallii</i>	Pinaceae
16. Engelmann Spruce	<i>Picea engelmannii</i>	Pinaceae
17. Sitka Spruce	<i>Picea sitchensis</i>	Pinaceae
18. Brewer Spruce	<i>Picea brewerana</i>	Pinaceae
19. Western Hemlock	<i>Tsuga heterophylla</i>	Pinaceae
20. Mountain Hemlock	<i>Tsuga mertensiana</i>	Pinaceae
21. Grand Fir	<i>Abies grandis</i>	Pinaceae
22. Pacific Silver Fir	<i>Abies amabilis</i>	Pinaceae
23. Noble Fir	<i>Abies procera</i>	Pinaceae
24. California Red Fir	<i>Abies magnifica</i>	Pinaceae
25. Subalpine Fir	<i>Abies lasiocarpa</i>	Pinaceae
26. Giant Sequoia	<i>Sequoiadendron giganteum</i>	Taxodiaceae
27. Redwood	<i>Sequoia sempervirens</i>	Taxodiaceae
28. Incense Cedar	<i>Calocedrus decurrens</i>	Cupressaceae
29. Western Red Cedar	<i>Thuja plicata</i>	Cupressaceae

<u>Common Name</u>	<u>Scientific Name</u>	<u>Family</u>
30. Alaska Cedar	Chamaecyparis nootkatensis	Cupressaceae
31. Arizona Cypress	Cupressus arizonica	Cupressaceae
32. Utah Juniper	Juniperus osteosperma	Cupressaceae
33. Alligator Juniper	Juniperus deppeana	Cupressaceae
34. Western Juniper	Juniperus occidentalis	Cupressaceae
35. Pacific Yew	Taxus brevifolia	Taxaceae
36. Black Cottonwood	Populus trichocarpa	Salicaceae
37. Red Alder	Alnus rubra	Betulaceae
38. Golden Chinkapin	Castanopsis chrysophylla	Fagaceae
39. Blue Oak	Quercus douglasii	Fagaceae
40. Arizona White Oak	Quercus arizonica	Fagaceae
41. California Redbud	Cercis occidentalis	Fabaceae
42. Bigleaf Maple	Acer macrophyllum	Aceraceae