Fall 9-1-2021

FORS 241N.00: Dendrololgy

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COURSE SYLLABUS
Chapter 1 FORS 241N - DENDROLOGY
Chapter 2 Autumn Semester 3 Credits

- **Instructor and course information**

Instructor: Burke, Edwin J. – Stone Hall – Room 105 – 406-243-5157
Schedule: Lecture: Tuesday, Thursday, 13:00 – 13:50 pm., Forestry 301 (Plant Lab)
Laboratory: Tuesday, 14:00 -16:50 & Friday, 14:00 -16:50, Forestry 301 (Plant Lab)
Required Text: Course Pack from Burke;
Optional Texts: Trees of North America -- Golden Press at any large bookstore or on-line
Textbook of Dendrology -- McGraw-Hill; Fruit and Twig Key, Dover Press.

- **Grading Scheme:**

Gymnosperm and Angiosperm Lecture Exams:

1 hr. mid-semester lecture exam covering Angiosperms during the Thursday lecture period, 7th week of class	100
1 hr. mid-semester exam covering Gymnosperms, during the Thursday lecture period, last week of class	100

Angiosperm Laboratory:

6 weekly quizzes, starting week #2 @60 pts. ea.	360
Laboratory Examination, over weeks 1-6, during lab, Week 7	200

Gymnosperm Laboratory

5 weekly quizzes, starting week # 9 @60 pts. ea	300
Laboratory Examination, over weeks 9-13 during lab period in the last week of class	200
Subtotal Points for Class	1260
Drop lowest quiz score for the semester	-60
Total Points for Class	**1200**

In addition, one grade-enhancement quiz will be given during the last week of the class. The enhancement quiz will cover Angiosperms, but can be used to count for a missed quiz or will substitute for the lowest quiz score if no quizzes were missed. In addition, the lowest quiz score for the semester, including the enhancement quiz if it is the lowest, will be dropped. Weekly grades will be posted in the classroom.

A=90%+; **B**=80%+; **C**=70%+; **D**=60%+; **F**< 60%

- **Outcomes**

Students will learn to identify, by sight and verbal description, 117 species of Trees and Shrubs, native to or introduced into North America. They will learn their native ranges, common sites and associates, important disease and insect pests, products made from them and their natural and human history. These species presence and use in urban forests will also be learned, as well as past, current and future ecological and political problems of the species.

- **Student Conduct Code**

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code.

- **Topical Outline and Course Schedule**
  FORS 241N--DENDROLOGY
  Autumn Semester

Week #	New Trees	TOPIC
		ANGIOSPERMAE
1	8	Angiosperm lifecycle, leaf, flower and fruit arrangements and types; *Salicaceae* (8). Lecture and lab during lab periods this week.
2	11	*Betulaceae (7), Juglandaceae* (4); Quiz A-1
3	12	*Fagaceae* (9), *Ulmaceae* (2), *Cannabaceae* (1); Quiz A-2
4	12	*Magnoliaceae* (2), *Lauraceae* (2), *Altingiaceae* (1), *Platanaceae* (1), *Elaeagnaceae* (1), *Rosaceae* (3), *Moraceae* (2); Quiz A-3
5	14	*Fabaceae* (5), *Sapindaceae* (9); Quiz A-4
6	10	*Aquifoliaceae* (1), *Tiliaceae* (1), *Anacardiaceae* (1), *Cornaceae* (3), *Oleaceae* (2), *Ericaceae* (1), *Bignoniaceae* (1); Quiz A-5
7	0	Review session during Tuesday's lecture period. The Angiosperm Lecture Exam is to be held during Thursday's lecture period. The Angiosperm Quiz A-6, the Grade Enhancement Quiz and the Angiosperm Laboratory Exam and will be held during this week's regular laboratory periods.
		GYMNOSPERMAE
8	9	Gymnosperm life cycle, cone and leaf structure; *Taxaceae (1), Ginkgoaceae (1), Pinaceae* –Subgenus *strobus (Hapoxylon)* of *Pinus* (9)
9	11	*Pinaceae* –Subgenus *Pinus (Dipoxylon)* of *Pinus* (11); Quiz G-1
10	10	*Pinaceae –Pseudotsuga* (1), *Larix* (3), *Picea (*6); Quiz G-2
11	10	*Pinaceae -Abies* (4), *Tsuga* (3), *Cedrus* (1); *Cupressaceae - Sequoia* (1), *Sequoiadendron* (1). Quiz G-3 will be held on-line due to Veterans' Day holiday
12	10	*Cupressaceae -- Calocedrus* (1), *Thuja* (2), *Taxodium* (1), *Chamaecyparis* (2), *Cupressus* (1), *Juniperus* (3), Quiz G-4
13	0	**Thanksgiving Break, No Classes**
14	10	Review session during Tuesday's lecture period. Gymnosperm Lecture Exam on Thursday. Quiz G-5 during Gymnosperm Laboratory Exam will be held during this week's regular laboratory periods.
15	0	Meetings w. Burke, if needed, by individuals to review progress during the semester
16	0	Finals Week. Examinations to be graded and ready to pick up by Friday. Grades posted in classroom.

Total # of trees = 117

- **Important Dates Restricting Opportunities to Drop Course Autumn 2019:**

Days into Semester	Opportunities	Drop Dates
To 7th instructional day	Last day for students to add Autumn classes via CyberBear without consent of instructor	7 September
To 15th instructional day	Last Day that students can: • drop classes on CyberBear with refund & no "W" on Transcript • withdraw from all classes with a partial refund • add Autumn classes with electronic override on CyberBear • change Autumn credits in variable credit courses • change grade mode in CyberBear • change grading option to or from Audit • buy or reuse UM's student health insurance coverage	20 September = last day
16th to 45th instructional day	Drop requires form with instructor and advisor signature, a $10 fee from registrar's office; student will receive a 'W' on transcript, no refund.	21 September through 1 November
Beginning 46th instructional day	• adds & drops require a Course Add/Change or Course Drop form with instructor's & advisor's signatures; $10 fee applies • drops require a Course Drop form with instructor's, advisor's, & Dean's signatures; $10 fee applies • A 'WP' or 'WF' will appear on the transcript for dropped classes; No refunds • Students can change variable credit amounts, or change grading options, (except audit) using a Course Add/Change form with instructor's & advisor's signatures	2 November– 10 December

- **Class Attendance Policy**
  - Students who are registered for a course but do not attend the first two class meetings may be required to drop this course. This rule allows for early identification of class vacancies to permit other students to add classes. Students not allowed to remain must complete a drop form or drop the course on the Internet: CyberBear.

  - Students are expected to attend all class meetings and complete all assignments for this course. Student may be excused for brief and occasional absences for reasons of illness, injury, family emergency, religious observance or participation in a University sponsored activity. (University sponsored activities include for example, field trips, ASUM service, music or drama performances, and intercollegiate athletics.) Students shall be excused for military service or mandatory public service.

  - Students incurring an excused absence will be allowed to make up missed work when done in a manner consistent with the educational goals of this course.

  - Students expecting to incur excused absences should consult with the instructor early in the term to be sure that they understand the absence policies for this course.

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- **FORS 241 Dendrology**
  Key to Species Groups and Geographic Location Abbreviations

OCYP	=	oak, chestnut, yellow-poplar	OH	=	oak, hickory
BBM	=	birch, beech, maple	SM	=	sycamore, silver maple
NH	=	northern hardwoods (mixture of white oak, northern red oak, sugar and red maple, yellow and paper birch, white ash, quaking and bigtooth aspen, yellow-poplar and basswood).			
SH	=	southern hardwoods (mixture of southern red oaks, sweetgum, black and water tupelo, flowering dogwood, magnolia, basswood, pecan hickories)			
SCP	=	sycamore, cottonwood, poplar (riparian or riverbanks of midwest is a better descriptor as this abbreviation can be confused with southern coastal plain)			
D-FL	=	Douglas-fir, western larch	NWC	=	northern white cedar
EWP	=	eastern white pine	ESAF	=	Engelmann spruce, subalpine fir
PJ	=	pinyon, juniper	SH	=	spruce, hemlock (eastern or western species)
SYP	=	southern yellow pine	WYP	=	western yellow pine
LPES	=	lodgepole pine, Engelmann spruce	SPF	=	spruce, pine, true fir
PC	=	Pacific coast of U.S. and Canada, including Alaskan coast			
NE	=	New England, or northeast U.S. and eastern Canada			
SW	=	Southwest U.S.	SCP	=	southern coastal plain
NRM	=	northern Rocky Mountains; eastern Washington, northern Idaho, Montana & Canada			
SRM	=	southern Rocky Mountains (Wyoming, southern Idaho, Utah, Colorado, New Mexico, Arizona, western Texas and northern Mexico)			
BH	=	Black Hills of South Dakota and northern Nebraska			
FB	=	Fog Belt of northern California, north to southern coast of Oregon			
IE	=	Inland Empire (western Montana, northern Idaho, western Washington, southeastern British Columbia)			

- **FORS 241 Dendrology**

Examples of <u>Tables of Comparative Features</u> that you should develop in order to learn how to differentiate the species that have similar characteristics

Morphologic Comparison of the Subgenera Leucobalanus and Erythrobalanus

Subgenus	Leaf Margins	Acorn Taste	Acorn Inner Shell	Acorn Maturity	Latewood vessel elements	Tyloses
Leucobalanus **(white oaks)**	**Smooth, rounded lobes**	**Mildly sweet to bland**	**Smooth**	**1 year**	**Outline indistinct on transverse surface when viewed w. hand lens**	**Abundant in heartwood**
Erythrobalanus **(red oaks)**	**Pointed, bristle-tipped lobes**	**Bitter**	**Pubescent**	**2 years**	**Outline distinct on transverse surface when viewed w. hand lens**	**Sparse in heartwood**

Morphologic Comparison of the Subgenera Hapoxylon (Strobus) and Dipoxylon (Pinus)

Subgenus	Fibro- vascular Bundles in Needle	Leaves per Fascicle	Fascicle Sheath	Umbo Location	Cone Armature	Earlywood to Latewood Transition
Strobus or Hapoxylon (soft pines)	***1***	***Usually 5 (except pinyons)***	***Deciduous***	***Usually terminal***	***Generally Unarmed***	***Generally gradual***
Pinus or Dipoxylon (hard pines)	***2***	***2's, 3's, 2&3's***	***Persistent***	***Dorsal***	***Generally Armed***	***Generally abrupt***