

Wood Science

FOR 240

Arthur Temple College of Forestry and Agriculture
Stephen F. Austin State University
Spring, 2006

COURSE SYLLABUS

Instructor: Matthew McBroom, Ph.D.

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Office Hours: MW 9:00-11:00; T 1:00-4:00 (Barring Storm Events)
Others by Appointment

COURSE DESCRIPTION

FOR 240 – Wood Science. 3 semester hours, 2 hours lecture (M 6:24-8:25 pm) and 3 hours lab (F 9:00-11:50) per week. This course will examine the physical and chemical properties of wood as related to its anatomy and economic uses. Prerequisite: MTH 138 or 143, Bio 131, Che 133.

Required Textbooks:

1. Bowyer, J. L., R. Shmulsky, and J. G. Haygreen, 2003. Forest Products and Wood Science, An Introduction, 4th Edition, Iowa State University Press, Ames, Iowa.
2. Hoadley, R. B., 1990. Identifying Wood – Accurate Results with Simple Tools, Taunton Press, Newton, Connecticut.
3. Supplemental materials: Class notes and current technical reports will be provided as additional materials.

Supplemental References:

1. Panshin, A. J., and C. de Zeeuw, 1980. Textbook of Wood Technology, 4th ed, McGraw-Hill Book Company, New York.

Required Material:

10x handlens for laboratory sessions

Useful Material:

SHARP pocketknife for surfacing wood blocks.

Useful Web Resources:

Lumber Marketing: <http://honeybee.helsinki.fi/mmekn/fpm/vt/index.htm>

Wood Handbook: <http://www.fpl.fs.fed.us/documnts/fplgtr/fplgtr113/fplgtr113.htm>

Great Hardwood ID Site: <http://legacy.ncsu.edu/WPS202/aaJosh/Homepage.htm>

Good Wood ID Site: <http://www.cefts.org/woodwebpage.pdf>

Good Wood ID Site: <http://www.utextension.utk.edu/publications/pbfiles/PB1692.pdf>

Periodic Table: <http://www.webelements.com/>

Teaching Philosophy: Learning is a two-way street, requiring interaction between teacher and student. We tend to learn in three distinct phases:

1. Accumulation of information or knowledge.
2. Assimilation of that knowledge into what we already know.
3. Application of new knowledge to various circumstances.

Learning occurs instinctively by observing, imitating, then understanding. Assimilation and application are integral to accumulating knowledge that can be used throughout one's life. Each phase of learning will be incorporated into the topics covered in this course.

Tentative Forestry 240 Lecture Schedule, Spring, 2006.

Lecture	Week	Topic	Book Chapter
1	1/23	Introduction, Tree Growth,	Intro, Ch 1
2	1/30	Macroscopic Wood Features,	Ch 2
3	2/6	Wood Composition and Structure	Ch 3
4	2/13	Softwood Structure	Ch 4
5	2/20	Hardwood Structure	Ch 5
6	2/27	Exam 1	Ch 1-5
7	3/6	Juvenile Wood, Reaction Wood, Branches & Roots	Ch 6
	3/13	Spring Break – Self Directed Study	
8	3/20	Bark; Wood and Water	Ch 7&8
9	3/27	Density and Specific Gravity; Strength and Mechanics; <i>FPS Society Mid-South Meeting</i>	Ch 9&10
10	4/3	Wood Durability and Protection; Silviculture and Wood Quality	Ch 11&12
11	4/10	Exam 2	Ch 1-12
12	4/17	Lumber; <i>TSAF Mtg.</i>	Ch 13
13	4/24	Structural and Nonstructural Panels; Composite Lumber Products	Ch 14-16
14	5/1	Pulp and Paper	Ch 17
15	5/8	Comprehensive Final Exam	Ch 1-19

Lecture schedule is tentative and subject to revision.

Tentative Forestry 240 Laboratory Schedule, Spring 2006.

Week	Date	Laboratory
1	1/27	Safety and use of handlens, pocketknife, and razor blades. Macroscopic features of softwoods, taxonomy, identification. Study of softwood species
2	2/3	Macroscopic features of softwoods continued, continued study of softwood species.
3	2/10	Macroscopic features of softwoods continued, continued study of softwood species.
4	2/17	<u>First Laboratory Test</u> Microscopic features of softwoods.
5	2/24	Microscopic features of softwoods continued.
6	3/3	Micro and Macro softwood features, review of softwood species
7	3/10	<u>Second Laboratory Test</u> Macroscopic features of hardwoods and hardwood identification
8	3/17	<i>Spring Break – Self Directed Study</i>
9	3/24	Macroscopic features of hardwoods and hardwood identification
10	3/31	Macroscopic features of hardwoods and hardwood identification
11	4/7	<u>Third Laboratory Test</u> Microscopic features of hardwoods and identification
12	4/14	Microscopic features of hardwoods and identification
13	4/21	Wood Properties Lab Project
14	5/5	<u>Fourth Laboratory Test, Lab Report Due</u>

Schedule tentative and subject to revision.

COURSE EVALUATION

Grading Philosophy: I expect natural resource professionals to be committed, self-motivated and enthusiastic about their chosen profession and the proper and ethical practice thereof. The grading system for this course is designed to provide each student with the opportunity to demonstrate his or her mastery of the subject matter.

Course Grades: Final course grades will be assigned as follows:

Lecture – 70%

2 Comprehensive Exams (20% each)

1 Comprehensive Final Exam, 5/8/06, 6:45 pm (30%)

Lab – 30%

4 Laboratory tests on wood structures and identification – 20%

1 Lab report on wood properties – 10%

No curves will be given.

15 bonus points applicable to the final exam will be given for attendance at the Forest Products Society's Mid-South Meeting on 3/28/2006 at the Fredonia Hotel.

<http://www.forestprod.org/confmssection06.html>

15 bonus points applicable to the final exam will be given for attendance at the Texas State Meeting of the Society of American Foresters on 3/18-3/19/2006 at Banita Hall.

Attendance: *Course attendance is required.* The student will be expected to accumulate a great deal of information during this course. New material builds on material from previous lectures so that absences will result in a student falling behind. Excused absences include participation in University-sponsored events, health problems, or family emergencies. Documentation for University excused absences must be provided. Notification of planned excused absences must be provided.

Each unexcused absence from a laboratory section will result in a 5% reduction in the final course grade. Each unexcused absence from lecture following the first one will result in a 5% reduction in the final course grade.

Make-up work will be accepted for a maximum of 2 weeks following an excused absence.

Academic dishonesty will not be tolerated. Cheating results in a zero grade. The procedures and policies of Stephen F. Austin State University regarding cheating will be strictly enforced.

Students with documented disabilities requiring special accommodations should notify the course instructor as soon as possible.