

COURSE SYLLABUS

GENERAL INFORMATION

FALL 2006

Course Title and Number: Forest Products 31-221

Required Text: Forest Products and Wood Science, by Bowyer, Fourth Edition

Instructor: Steven Resh (Full-time)

Office Location: Careers Build. T-127, T-107

Office Hours: Monday, 11-12 Thurs., 9-11

Office Phone: (301) 784-5307
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Day and Time of Class: MF 9:00-9:50 - Lect.
Th 12:30-3:15 - Lab

**Please note: Under extenuating circumstances, the instructor has the right to change any course provisions or requirements during the semester.

I. PURPOSE

- A. To instruct the Forest Technician about the broad spectrum of useful products, which come from the forest and the process of manufacturing these products. The course will concentrate on the student's ability to understand and identify wood. Field labs will concentrate on student visits to wood product manufacturing facilities. Three credit hours. Two hours lecture and 3 hours lab per week, 15 weeks. Prerequisite: Forestry 101 (Intro) or consent.
- B. Course Objectives: To present the student with all aspects of wood properties, use and manufacture of forest products, and the identification of wood species in order that he/she will be adequately equipped for employment in the forest products industry. The student should apply this knowledge to the production of forest products.

II. COURSE POLICIES

- A. Attendance: Perfect attendance is expected with allowance for medical absence. Students are expected to be prompt at start of class. If possible, the instructor should be informed of any emergency absences before they occur. Students with perfect attendance will receive a 3% increase in their final grade. Those student who miss classes will receive a percentage deduction of their final grade equal to the number of times they were absent beyond the first time. Being late two times is equal to missing one class.

- B. Participation: Students are expected to complete each assignment on schedule, and participate in class discussion.
- C. Grading: The semester grade will consist of the average of three tests (lectures & text [75%]) plus several quizzes based on identification of approximately 36 wood species [25%].
- Grading System:
- | | |
|----------|---|
| 90-100 | A |
| 80-89 | B |
| 70-79 | C |
| 60-69 | D |
| Below 60 | F |
- Grades below C must be repeated for students in the Forest Technology Program.
- D. Extra Credit: Not formally offered, exceptions are possible.
- E. Tutoring and extra help sessions: Tutoring is available through the college. Extra help is available directly from the instructor as requested.
- F. Form of assignments: All assignments must be typed. Wood species identification - At least 36 wood species will be presented 5 to 10 species at a time. Each week, the previous species will be presented in quiz form for identification by the student. Field labs - Reports describing manufacturing facilities visited may be required of the students.
- G. Completion date of assignments: At each wood identification lab, it is expected that students will examine and adequately study the species presented that week in preparation for the quiz the following week. Each student will be allowed to take a set of study specimens home with him or her. These must be returned.
- H. Plagiarism and cheating: These crimes are not allowed and upon discovery will be dealt with according to the college policy. Cheating during tests will result in test paper retrieval - resulting in a zero grade for that test.
- I. Exam dates will always be announced at least one week before the test is given.
Make-up exams: This type of exam is not encouraged, but is allowed in the event of documented sickness or emergency if the instructor is notified **before** the test.
- J. Each student will need a 10X hand lens and a good Pocketknife at all wood ID labs. Because of travel time, labs will run late during the latter part of the course.

III. COURSE REQUIREMENTS

A. Course outline topics as outlined in Section III C from Forest Products and Wood Science. By Bowyer Et. Al. Iowa State University Press. Ames, Iowa. Fourth edition will be covered in the order listed.

B. Library assignments: None.

C. Required reading:
Topics listed below are presented throughout the semester. Lab work will consist of wood identification activities and other procedures designed to make the student familiar with wood properties. One-half of semester labs will concentrate on field trips to area wood-using industries.

I. The Nature of Wood

1. Tree Growth and Production of Woody Tissue - Ch. 1 Bowyer
2. Macroscopic Character of Wood - Ch. 2 Bowyer
3. Composition and Structure of Wood Cells - Microscopic Characteristics - Ch. 3 Bowyer
4. Softwood Structure - Ch. 4 Bowyer
5. Hardwood Structure - Ch. 5 Bowyer
6. Juvenile Wood and Reaction Wood - Ch. 6 Bowyer

Test #1

II. Wood Properties and Modification of Quality

1. Wood and Water - Ch. 8 Bowyer
2. Density and Specific Gravity - Ch. 9 Bowyer
3. Strength and Mechanics - Ch. 10 Bowyer

Test #2

III. The Technology of Major Forest Products

1. Lumber Types and Technology - Ch. 13 Bowyer
2. Paper and Fiber Products - Ch. 17 Bowyer
3. Plywood Production and Use - Ch. 14 Bowyer
4. Particleboard and Composite Products - Ch. 15&16 Bowyer

Test #3

Laboratory Schedule

| Week # | Activity |
|--------|---|
| 1 | Tree growth, wood structure, anisotropic nature of wood. Please bring your 10X lens |
| 2 | Microscopic examination of wood. |
| 3 | Introduction to Wood ID using a Key and proper procedure. Please bring a small pocket knife and your lens. Five to seven species will be keyed out. |
| 4 | Continuation of Wood ID. Five to ten new species. Quiz on week three species. |
| 5 | Continuation of Wood ID. Five to ten new species. Quiz on week three and four species. |
| 6 | Continuation of Wood ID. Five to ten new species. Quiz on week three, four and five species. |
| 7 | Continuation of Wood ID. Five to ten new species. Quiz on week three, four, five and six species. |
| 8 | Wood ID Final. All species given. |
| 9 | Preparation of kiln samples, use of moisture meters, specific gravity determination. |
| 10 | Hardwood lumber grading, theory and practice. |
| 11 | Trip to Blue Triangle Lumber Company, sawmill, dry kilns. (late) |
| 12 | Trip to Statton Furniture Company in Hagerstown Md. We will be late returning. |
| 13 | All day trip to West Virginia. Weyerhaeuser OSB plant, Sutton WV and Truss-Joist McMillan, Buckhannon. |
| 14 | Tour of New Page Pulp & Paper Co, Luke, Md. (late) |

The order of the labs in week 10-15 may vary slightly.

D. Recommended Readings:

Wood Identification Handbook-Commercial Woods of the Eastern US. By Marshall S. White. Colonial Hardwoods, Inc., Falls Church, VA. 1980.
Textbook of Wood Technology. 4th Ed. By Panshin and DeZeeuw. McGraw-Hill Book Co. 1980.
Wood and Wood Products. By Spencer and Luy. Charles Merrill Publishing Co. 1975. (out of print)
Hough's Encyclopedia of American Woods. By E.S. Harrar. 16 Volumes. Robert Speller & Sons, NY. 1957-1981.

E. Supplemental Learning Resources: Appropriate handouts pertaining to the wood industry and wood identification are used. Wood specimens with labeled identification are available for student use. Several films are used to highlight selected topics.

F. Safety: Hardhats, safety glasses and work boots must be worn when visiting wood utilization facilities.