FOR 240 – WOOD SCIENCE
Spring, 2018 – Friday Section
COURSE SYLLABUS

Professor: Matthew Lowe, Ph.D.
Office: FORL 111
Email: lowematth@sfasu.edu
Phone: 468-2195
Office Hours: Office Hours: MF 9:00-11:00
Class Schedule: MF 8:00-8:50 – Lecture, Wood Science
MWF 1:00-3:50 – Lab, Wood Science
Room: Lecture & Lab FORL103

Teaching Assistant: Sam Rhodes
Office: FOR 224
Phone: 468-2412
Email: rhodessj@jacks.sfasu.edu

COURSE DESCRIPTION

FOR 240 – Wood Science. 2 semester hours, 1 hours lecture and 3 hours lab per week. This course will examine the physical and chemical properties of wood as related to its anatomy and economic uses.
Required Textbooks:

Supplemental References:

Required Material:
10x handlens for laboratory sessions

Useful Material:
SHARP knife or razor blade holder for surfacing wood blocks.

Program Learning Outcomes (This is not a General Education Course): Forestry 240 is one of the forestry core courses required of all forestry majors and thus competency is required. A minimum grade of a “C” must be attained or the course will have to be repeated. The course is designed to address the following Program Learning Outcomes, as given in the BSF Program Matrix:
1. Demonstrate understanding and competency of forest ecology and biology;
2. Demonstrate understanding and competency in the measurement of forest resources;
3. Demonstrate understanding and competency in managing forest resources;
4. Demonstrate understanding and competency of forest resource policy, economics, and administration.
5. Demonstrate understanding and competency in oral and written communication skills.

The above PLOs are also recognized as vital components by the Society of American Foresters, the program’s accrediting agency.

<table>
<thead>
<tr>
<th>B.S. Forestry Program Learning Outcomes</th>
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<tr>
<td>Proficiency Levels</td>
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<tbody>
<tr>
<td>FOR 409</td>
<td>I</td>
<td>I</td>
<td>B</td>
<td>I</td>
<td>B</td>
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B – Basic – FOR 240 supports Program Learning Outcome by providing students with fundamental information, definitions, concepts, and lab activities relative to the expected outcomes.
I – Intermediate – FOR 240 supports Program Learning Outcome by providing students with topic-specific information, concepts, applications, and lab activities that increase the students’ skills in making tactical implementation decisions relative to the expected outcomes.

Student Learning Outcomes: Upon successful completion of this course, the student will:

Understand macroscopic and microscopic character and structure of wood, as well as differences between hardwood and softwood structure (PLO #1 and 3);

Understand and be able to quantify wood measurements like density, strength, and mechanical properties. (PLO #2 and 4);

Understand how wood is utilized, how forest products are manufactured, marketed, and valuated. (PLO #3 and 4)

Have demonstrated competency in oral and written communication skills (PLO #5).

Useful Web Resources:
Great Hardwood ID Site: [http://legacy.ncsu.edu/WPS202/aaJosh/Homepage.htm](http://legacy.ncsu.edu/WPS202/aaJosh/Homepage.htm)
Good Wood ID Site:  http://www.cefts.org/woodwebpage.pdf
Periodic Table:  http://www.webelements.com/

Teaching Philosophy:

I see & I forget.
I hear & I remember.
I do & I understand.

A good teacher is also a good learner. The classroom is an interactive environment where pushing boundaries is encouraged, high standards, integrity, and work ethics are expected, and making mistakes is recognized as a critical component of the learning process. Building relationships and mentoring students is an important component of establishing this environment. Approaching learning as a discipline and conveying the importance of that discipline rather than education as a means to an end is a critical aspect of a teacher’s role. Engaging students to consider the underlying processes that have contributed to our current understanding of a subject matter, yet empowering them to question the very principles upon which that understanding was built.

**Tentative Forestry 240 Lecture Schedule, Spring, 2018.**

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Week</th>
<th>Topic</th>
<th>Shmulsky and Jones Chapter</th>
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<tbody>
<tr>
<td>1</td>
<td>1/26</td>
<td>Introduction, Tree Growth</td>
<td>Intro, Ch 1</td>
</tr>
<tr>
<td>2</td>
<td>2/2</td>
<td>Composition and Structure of Wood</td>
<td>Ch 3</td>
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<tr>
<td>3</td>
<td>2/9</td>
<td>Juvenile Wood, Reaction Wood, Branches &amp; Roots</td>
<td>Ch 6</td>
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<tr>
<td>4</td>
<td>2/16</td>
<td>Wood and Water</td>
<td>Ch 7</td>
</tr>
<tr>
<td>5</td>
<td>2/23</td>
<td>Density and Specific Gravity</td>
<td>Ch 8</td>
</tr>
<tr>
<td>6</td>
<td>3/2</td>
<td>Wood Durability and Protection</td>
<td>Ch 10</td>
</tr>
<tr>
<td>7</td>
<td>3/9</td>
<td>Silviculture and Wood Quality</td>
<td>Ch 11</td>
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<tr>
<td></td>
<td></td>
<td><strong>Exam 1</strong></td>
<td></td>
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<tr>
<td>8</td>
<td>3/16</td>
<td>Spring Break – Self Directed Study</td>
<td>Ch 1-4, 6-10</td>
</tr>
<tr>
<td>9</td>
<td>3/23</td>
<td>Lumber</td>
<td>Ch 12</td>
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<tr>
<td>10</td>
<td>3/30</td>
<td><strong>No Class Easter Break</strong></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>4/6</td>
<td>Structural Composites</td>
<td>Ch 13</td>
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<tr>
<td>12</td>
<td>4/13</td>
<td>Nonstructural Composites</td>
<td>Ch 14</td>
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<tr>
<td>13</td>
<td>4/20</td>
<td>Pulp and Paper</td>
<td>Ch 15</td>
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<tr>
<td>14</td>
<td>4/27</td>
<td>Energy and Chemical Products</td>
<td>Ch 16</td>
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<td><strong>Exam 2</strong></td>
<td>Ch 1-15</td>
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<tr>
<td>15</td>
<td>5/4</td>
<td>Global Wood Market; Ethics and Policy</td>
<td>Ch 17</td>
</tr>
<tr>
<td>16</td>
<td>5/11</td>
<td>Comprehensive Final Exam TBD</td>
<td>Ch 1-17</td>
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</tbody>
</table>

Lecture schedule is tentative and subject to revision. Assignments may be due during Dead Week. Wood Concepts and Utilization Exams (Exams 1 and 2) will be given on Wednesday mornings at 8:00.

**Tentative Forestry 240 Laboratory Schedule, Spring 2018.**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Laboratory</th>
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<tbody>
<tr>
<td>1</td>
<td>1/26</td>
<td>Introduction, Tree Growth, Wood as a Building Material - Lowe's trip</td>
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<tr>
<td>2</td>
<td>2/2</td>
<td>Macroscopic Wood Features and softwood identification</td>
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<tr>
<td>3</td>
<td>2/9</td>
<td>Composition and Structure; softwood identification</td>
</tr>
<tr>
<td>4</td>
<td>2/16</td>
<td>Wood Composition and Structure; softwood id. <strong>Softwood Test</strong></td>
</tr>
<tr>
<td>5</td>
<td>2/23</td>
<td>Softwood Structure; Microscopic features of softwoods</td>
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</tbody>
</table>
Wood Strength and Mechanics Test - Softwoods

Wood Strength and Mechanics Lab – Wood Species Report Due

Spring Break – Self Directed Study

Wood Structure Report Due

Macroscopic features of hardwoods and hardwood identification

No Lab - Easter Break

Macroscopic features of hardwoods and hardwood identification

4/13 Hardwood Structure; Microscopic features of hardwoods and identification Hardwood and Softwood Test

Tropical and Exotic Hardwoods; Microscopic features of hardwoods and identification

Wood and Energy: Hardwood and Softwood Test

Dead Week Lab - TBD

Schedule tentative and subject to revision. Labs will meet during Dead Week. Lab final may be given during Dead Week.

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 mastery of the subject matter.

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

2 Wood Concepts and Utilization Tests – 100 pts ea, 200 pts
4 Wood ID Tests – 50 pts ea, 200 pts
1 Wood Product Brochure & Presentation - 50 pts
1 Wood Species Reports – 50 pts,
1 Wood Structure Report – 50 pts
1 Comprehensive Final Exam – 200 pts

Student participation, input, and perspective in class is encouraged and welcomed. Please feel free to contribute.

The responsibility of the ethical practice of forestry and wood science and processing will also be discussed. The ability to communicate through both written and oral methods the knowledge of wood science and wood properties will be required.

Attendance: Course attendance is not required. However, each student will be responsible for all the materials covered in both lecture and lab. As an incentive, 5% will be added to the final course grade for those students with perfect attendance in both lecture and lab (excused absences falling under university policies will be taken into consideration). Missed lectures and labs may be made up by attending another section of that lecture or lab during the same week.

Mail: Email will be the official tool for communicating the important reminders, announcements, and further assignment directions. Please check your mySFA email account regularly for course-related information. You can also forward your account with your preferred email address.

Academic Integrity (A-9.1)
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at [http://www.sfasu.edu/policies/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)

Withheld Grades Semester Grades Policy (A-54)
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

Responsible Use of Technology
It is expected that all students will only use cell phones, PDAs, laptop computers, MP3 players and other technology outside of class time or when appropriate in class. Answering a cell phone, texting, listening to music or using a laptop computer for matters unrelated to the course is unprofessional and may be grounds for dismissal from class or other penalties. Use of laptops in such a way that is disturbing to other students will not be permitted. Lectures may be recorded by students.

Classroom Behavior
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

Students with Disabilities
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

EXTRA CREDIT!!

You may receive 20 points on your final exam if you submit a course Certificate of Completion from the Southern Pine Council for Unit 1, Design, Specify, and Build by the Monday of Dead Week (4/29/2013).

http://ceu.southernpine.com/eClassroom/

Your completed Certificate must be submitted by 4/27/2018 by 5:00 p.m. in order to receive credit.

Wood Species Reports

During lab, a wood species will be assigned to you. You will write a paper on that species. This paper will be a minimum 5 pages of double-spaced text in length, not including pictures, figures, or literature cited. This paper should be about this wood species only. The following topics must be covered:

1. Geographic range and extent
2. Tree Characteristics - Silvicultural aspects
3. Wood Properties (Appearance, Odors, Anatomy, Specific Gravity, Durability, Strength, etc) and unique features
4. Chief past and current wood uses
5. Overall economic value and potential uses or development for higher future value.

You must cite references for this information, including at least 3 sources from journals or books (not from the internet).

The paper should follow this format:
I. Introduction – introduce the species and relevant information about it.
II. Species Information – subdivide this section into relevant subsections (above)
III. Conclusions – state most important findings about species, and emphasize potential for future value-added uses.
IV. Literature Cited – Use the format from the Forest Products Journal http://www.forestprod.org/fpjover.html

The paper will be graded based on:
Content (were all topics addressed, etc) 50%
Quality (grammar, spelling, punctuation, etc) 30%
<table>
<thead>
<tr>
<th>Format</th>
<th>10%</th>
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<tbody>
<tr>
<td>Creativity</td>
<td>10%</td>
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