INSTRUCTOR: DR. HANS M. WILLIAMS  
OFFICE: FORESTRY RM 112; OFFICE PH: 468-2313; Email: hwilliams@sfasu.edu  
OFFICE HOURS: 8:00 am to 9:30 am and 4:30 pm to 5:00 pm, Monday-Friday

MEETING TIMES: Lecture: FOR 209.001/ENV 209.001: MW 11-11:50, Room 222  
Laboratory: FOR 209.021/ENV 209.021: T 2:00 to 4:50 pm  
FOR 209.022/ENV 209.022: W 1:00 to 3:50 pm


Course Description: The climatic, edaphic, and biotic factors and their relationship to woody plant growth and development. Factors will be discussed at the individual plant and forest community levels. PREREQUISITES: BIO 131.

Program Learning Outcomes: FOR 209 is a core course requirement for all forestry students, regardless of major. ENV 209 is an ENV core substitute for BIO 313 for environmental science students.

The course shall meet the following BSF forestry learning outcomes:

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.

Items #1 - #4 above are required by the Society of American Foresters, the program’s accrediting agency. The matrix below presents the level of proficiency for each of the program learning outcomes (PLOs).

<table>
<thead>
<tr>
<th>B.S. Forestry Program Learning Outcomes</th>
<th>Proficiency Levels</th>
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</thead>
<tbody>
<tr>
<td>FOR 209</td>
<td>I</td>
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</table>

1. B – Basic – course supports Program Learning Outcome by providing students with fundamental information, definitions, concepts, and lab activities relative to the expected outcomes.
2. **I** – Intermediate – course 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.

The course shall meet the following BS Environmental Science learning outcomes:
1. Demonstrate competency in environmental assessment;
2. Demonstrate understanding in environmental management;
3. Demonstrate understanding in environmental policy and professional ethics;
4. Demonstrate competency critical thinking communicated through effective scientific written reports and oral presentations.
5. Demonstrate preparation to pursue a professional career and/or graduate degree programs.

<table>
<thead>
<tr>
<th><strong>Course</strong></th>
<th><strong>PLO 1</strong></th>
<th><strong>PLO2</strong></th>
<th><strong>PLO3</strong></th>
<th><strong>PLO4</strong></th>
<th><strong>PLO5</strong></th>
</tr>
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<tbody>
<tr>
<td>BIO 313/ENV 209</td>
<td></td>
<td>I</td>
<td>I</td>
<td>B</td>
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**Student Learning Outcomes (SLOs):** Lectures will emphasize the abiotic variables of light, temperature, and water on individual tree survival and growth (FOR/ENV PLO1). Basic concepts in community ecology, diversity and succession will be presented in laboratory and lecture (FOR/ENV PLO1). Laboratory will include practicing various field measurements used to assess the functional status of forest ecosystems (FOR PLO2, ENV PLO1). The autecology and synecology concepts presented will include discussions related to current forest policy, ethics and management issues (FOR PLO3 and PLO4, ENV PLO2 and 3). Technical writing will be practiced through the laboratory reports assigned (FOR PLO5, ENV PLO4 and PLO5).

**Course Objective:** Following the successful completion of the course, the student should be able to demonstrate by written and/or oral presentation a minimum average competency in understanding key autecology and synecology concepts. Knowledge of these concepts will support understanding the advanced material presented in FOR/ENV 300-level and 400-level courses.

**LECTURE OUTLINE:**

<table>
<thead>
<tr>
<th><strong>Topic/Dates</strong></th>
<th><strong>Chapters/Pages</strong></th>
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<tbody>
<tr>
<td>Forest Ecology and the Ecosystem Concepts/Weeks 1 and 2</td>
<td>1, 2, 3</td>
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<tr>
<td>Applied Forest Genetics/Weeks 3 and 4</td>
<td>4</td>
</tr>
<tr>
<td>Phenotype and Genotype</td>
<td></td>
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<tr>
<td>Heritability</td>
<td></td>
</tr>
</tbody>
</table>
Vegetative Propagation and Sexual Reproduction
Phenotypic Plasticity
Seed Source, Ecotype, and Family

Tree Life Cycle/WEEKS 5 AND 6
Reproduction
Dispersal
Establishment
Growth

**First Lecture Exam on Concepts, Genetics and Life Cycle

Solar Radiation/WEEKS 7 AND 8
Spectral Quality
Photosynthetic Photon Flux Density and Shade Tolerance
Photoperiodism
Phototropism

Temperature/WEEKS 9 AND 10
Temperature and Topography
Temperature and Forest Cover
Thermoperiodism - Chilling Hours/Heat Sums
Cold Hardiness

Water/WEEKS 11 AND 12
Atmospheric Precipitation
Precipitation Fate in Forests
Ecological Effectiveness of Water
Plant Adaptations to Water

** Second Lecture Exam on Solar Radiation, Temperature, Water

Carbon Balance of Trees and Ecosystems/WEEKS 14 AND 15

** Carbon Balance will be included on Comprehensive Final Examination.

** General Course Policies

**Course Attendance:** Attendance will not be taken for lecture periods. I will not provide handouts or review the lecture to students missing lecture due to an unexcused absence. If the absence is excused, (health, family emergency, participation in approved University sponsored event), I will clarify any questions regarding the lecture notes and provide any handouts during scheduled office hours.

Attendance will be taken before each laboratory. If absent from a laboratory, I will not accept the assignment and points totaling a half-letter grade will be deducted from the student's final point total for each occurrence. There are no make-up laboratories. Students missing a laboratory because of an excused absence are still responsible for
completing scheduled assignments. See me as soon as possible, if you missed a laboratory due to an excused absence. Students are responsible for providing documentation for an excused absence. See the SFASU Policy Manual, Class Attendance and Excused Absence, Policy A-10 on SFASU web-site for more information. (http://www.sfasu.edu/policies/class_attendance_excused_abs.asp)

**Acceptable Student 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.

Listed below are two, common behavioral issues that can disrupt the learning environment. Be aware of the policy for each behavior listed below.

1. **Cell phones (including text messaging):** The use of a cell phone, including text messaging, will not be tolerated in the classroom or during a field laboratory. Make sure that cell phones are turned-off and stowed before entering the classroom. If a cell phone rings during a lecture or laboratory, or I observe the use of text messaging, I will deduct twenty (20) points from the offending student's total point score for each occurrence. If a student is observed using a cell phone during a test, especially text-messaging, the policy for cheating will apply (See Cheating Policy described below).

2. **Excessive tardiness/leaving early:** Lecture and laboratory will begin promptly at the appointed time. Repeated tardiness will not be tolerated. A student can be late to class twice without penalty. A twenty (20) point reduction in the total point score will be applied for each additional occurrence. Tardiness to laboratory will usually result in the student missing the laboratory. See above for the laboratory attendance policy.

Students that have to leave during lecture/laboratory for a legitimate reason must make prior arrangements. If a student decides to leave during a lecture/laboratory for unexcused reasons, do not return during that particular period. A twenty (20) point reduction in a student's final point total will be applied for each occurrence.

**Assignments and Grades:** FORESTRY and ENVIRONMENTAL SCIENCE STUDENTS: A minimum course grade of "C" shall be earned, or the student will need to repeat the course. There will be 350 points available in lecture and 360 points available in laboratory (710 total course points). Point totals from lecture and laboratory will be combined to determine the final course grade (i.e. \( \geq 639 = A, 568 \text{ to } 638 = B, \) etc.). Lecture Assignments include:
1. Two, one-hour lecture exams. 100-points each.  Total = 200 points
2. One, comprehensive final exam.  Total = 150 points

The one-hour lecture exams will be announced at least 7 working days prior to the exam date. Exams will be given during lecture period. Exams will consist of definitions, true or false, matching, multiple choice, and short answer. Exam material will come from lecture notes and textbook readings. Failure to read the textbook assignments will result in a poor performance on the exam. The comprehensive final exam, administered during final exam week, will include material from both lecture and laboratory. Students shall be held reasonably accountable for proper spelling, sentence structure, and legibility during the written exams.

The 360 points available in laboratory are assigned as follows (See laboratory schedule):

1. First Laboratory Exam 100 points
2. Second Laboratory Exam 100 points
3. Eight (8) Laboratory Reports 160 points

**Reading Handouts:** In addition to the assigned textbook readings, handouts will accompany each laboratory. The laboratory tests shall include information from the assigned textbook readings and handouts.

**Make-up Exams and Late Assignments:** Students missing an exam because of an excused absence should make arrangements to make-up the exam. There are no make-up exams for unexcused absences. Unless specified otherwise, laboratory reports are due at the beginning of laboratory one week after assigned. No laboratory assignments will be accepted after the due date and time, unless late because of an excused absence. The student is responsible for providing documentation as evidence for an excused absence.

**Field Laboratories:** Students will meet the instructor in the Forestry Building garage, located at the east end of building, prior to departure for the field. Unless notified, field dress will include long pants, work boots, hard hat and compass. Students not dressed in appropriate field attire will not be allowed to attend laboratory. Missing laboratory for improper dress will count as an unexcused absence. Vans will leave promptly at the scheduled time.

**Laboratory Report Format:** The reports should be typed, double-spaced, and, if multiple pages, the pages attached with a staple in the upper left-hand corner. Unless other instructions are provided, each report should have a cover sheet (assignment title, name, lab instructor, lab section, date). The text of each report should be divided into Introduction, Methods, Results and Discussion sections. The appropriate heading should be at the beginning of each section. Improper sentence structure and poor spelling will result in significant point reductions on written assignments.
Other Policies: Cheating and Plagiarism - The severest penalty (an F for the course) will be assigned to any student caught cheating or plagiarizing on an assignment. Cheating and Plagiarism are defined in the SFASU Policy Manual (Academic Integrity A-9.1; http://www.sfasu.edu/policies/academic_integrity.asp).

Cheating includes:
1. Using unauthorized materials
2. Falsification or invention of any information
3. Helping someone else cheat or plagiarize

Plagiarism is presenting the words of ideas of another person as if they were your own. Plagiarism includes:
1. Submitting an assignment as your work, but, 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
3. Using the words or ideas of an author in your paper without giving proper credit

Student Disability - Students seeking special accommodations for learning or physical disability must first contact the Office of Disabled Student Services (ext. 3004). Accommodation requests must be discussed with the instructor.
Table 1. The proposed schedule for FOR/ENV 209 laboratory for the FALL 2010 semester.
Tuesday Lab: 2:00 pm to 4:50 pm; Wednesday Lab: 1:00 pm to 3:50 pm

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Location</th>
<th>Textbook Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 31, Sep 1</td>
<td>Vegetation Assessment Concepts</td>
<td>Room 222</td>
<td>Chapter 1</td>
</tr>
<tr>
<td>Sep 7, 8</td>
<td>Forest Structure</td>
<td>Field**</td>
<td>Chapter 15: 386-406</td>
</tr>
<tr>
<td>Sep 14, 15</td>
<td>Vegetation Assessment-Fixed Plots</td>
<td>Field**</td>
<td>Chapter 4</td>
</tr>
<tr>
<td>Sep 21, 22</td>
<td>Arborgen Seed Center</td>
<td>Field**</td>
<td>Chapter 15: 380-406</td>
</tr>
<tr>
<td>Sep 28, 29</td>
<td>Community Ecology Concepts</td>
<td>Room 222</td>
<td>Chapter 15: 380-406</td>
</tr>
<tr>
<td>Oct 5, 6</td>
<td>Water Quality and Forest Mgmt.</td>
<td>Field**</td>
<td></td>
</tr>
<tr>
<td>Oct 12, 13</td>
<td>BMP Effectiveness</td>
<td>Field</td>
<td></td>
</tr>
<tr>
<td><strong>Oct 19, 20</strong></td>
<td>First Laboratory Exam</td>
<td><strong>Room 222</strong></td>
<td></td>
</tr>
<tr>
<td>Oct 26, 27</td>
<td>Site Quality</td>
<td>Field**</td>
<td>Chapter 13</td>
</tr>
<tr>
<td>Nov 2, 3</td>
<td>Est. CWD in Riparian Forests</td>
<td>Field**</td>
<td>Chapter 10, 245-253</td>
</tr>
<tr>
<td>Nov 9, 10</td>
<td>Rapid Bioassessment</td>
<td>Field**</td>
<td>Chapter 21: 615-622</td>
</tr>
<tr>
<td>Nov 16, 17</td>
<td>Biological Diversity</td>
<td>Field**</td>
<td>Chapter 14</td>
</tr>
<tr>
<td>Nov 23, 24</td>
<td>Thanksgiving Holiday-No Laboratory</td>
<td>Field</td>
<td>Ch. 20: 577-588, 608-612</td>
</tr>
<tr>
<td>Nov 30, Dec 1</td>
<td>Succession</td>
<td>Field</td>
<td>Ch 17: 443-463, 473-484</td>
</tr>
<tr>
<td><strong>Dec 7, 8</strong></td>
<td>Second Laboratory Exam</td>
<td><strong>Room 222</strong></td>
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</tbody>
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**Laboratory Report Assignment.

Due to Weather or scheduling conflicts with invited speakers, the schedule is subject to change.