Principles of Forest Soils

Syllabus

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Office hours: M and W 8:00 - 9:00
T and Th 8:00 – 11:00

Laboratory Instructors: Ryan Svehla and William Wedge
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(936) 468-1180
ryan_SFA@yahoo.com; wedgew@jacks.sfasu.edu


Course Description: Three semester hours, two hours lecture and three hours laboratory per week. Physical, chemical and biological properties of forest soils, their role in forest ecosystems, and management concerns. Required field trips. Prerequisite: CHE 133 or CHE 111

Course Objectives: The primary objective of this course is to make the student aware of the importance of soils in natural ecosystems and management of those ecosystems. The course will cover aspects of the physical, chemical and biological properties of soils and also the classification of soils. This required course will address the needs of forestry and related majors, and the subject matter supports courses in ecology, hydrology, silviculture, and forest management.

Program Learning Outcomes:

Program 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.
B.S. Forestry Program Learning Outcomes

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</thead>
<tbody>
<tr>
<td>FOR 349</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>I</td>
<td>A</td>
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N/A – Not Applicable
B – Basic
I – Intermediate
A – Advanced
M – Mastery

Definition of Rating Categories:

1. N/A – Not Applicable – course does not support the Program Learning Outcome.

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

3. 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.

4. A – Advanced – course supports Program Learning Outcome by providing students with transitional, high level topic-specific information, activities, and opportunities that enable the students to apply their critical thinking and tactical skills to resolved increasingly challenging strategic situations.

5. M – Mastery – course supports Program Learning Outcome by providing students with opportunities to independently apply tactical and strategic planning skills to successfully accomplish real-world, non-academic management objectives. Completes students’ preparedness for entry-level professional activity accomplishment.

Student Learning Outcomes: The primary objective of this course is to make the student aware of the nature and functions of soils and the importance of soils in natural resource management. The course will cover important aspects of the physical, chemical and biological properties of soils, as well as soil classification, and how these relate to land management. This required course will address the needs of forestry and related majors, and the subject matter supports courses in hydrology, silviculture, and forest management.

Course Calendar:

<table>
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<tr>
<th>Lecture Topics</th>
<th>Text Chapters</th>
<th>Dates*</th>
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<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
<td>8/29, 8/31</td>
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<tr>
<td>Soil Formation and Morphology</td>
<td>2</td>
<td>9/05, 9/07, 9/12</td>
</tr>
<tr>
<td>Soil Physical Properties</td>
<td>4</td>
<td>9/14, 9/19, 9/21, 9/26</td>
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<tr>
<td><strong>EXAM 1</strong></td>
<td></td>
<td>9/28</td>
</tr>
<tr>
<td>Soil Water</td>
<td>5</td>
<td>10/03, 10/05, 10/10</td>
</tr>
<tr>
<td>Soils and the Hydrologic Cycle</td>
<td>6</td>
<td>10/12, 10/17</td>
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Course Policies:

A. Grading System - Four exams together will comprise 80 percent (each 20 percent) of the final grade. The overall laboratory grade will comprise the remaining 20 percent of the final grade. The overall laboratory grade is calculated as the mean of the four laboratory reports, three quizzes, and one assignment. **All students entering the environmental science and forestry undergraduate degree programs during or after fall semester of 2008 must make a grade of C or better in each core environmental science (ENV) or forestry (FOR) courses to have the course count toward graduation. This course is a core forestry course.**

B. Grading Scale - The following scale is adhered to strictly. Individual overall means are calculated to the first decimal place.

- 90.0 - 100  = A
- 80.0 - 89.9 = B
- 70.0 - 79.9 = C
- 60.0 - 69.9 = D
- < 60.0 = F

C. Late Assignments - Make-up exams will only be given if arrangements are made with the instructor before missing the scheduled exam. A documented excuse will be required. Otherwise, missing exams will be counted as zeroes in the overall grade computation. Late laboratory assignments will not be accepted.

D. Attendance - Attendance in the laboratory section is mandatory. The final laboratory grade will be reduced by one letter grade per absence.

E. Other Policies - Student must complete the on-line course evaluation for the course. **Grades will be withheld until the course evaluation is completed.** All classroom conduct and performance should be compatible
with the code of ethics stated in the current SFA Student Handbook. Students with documented disabilities who need course adaptations or accommodations should make an appointment to discuss their needs with the course instructor as soon as possible.

F. 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.

Read the complete policy at
http://www.sfasu.edu/policies/academic_integrity.asp

G. 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.
H. 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.

I. 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/.
# LABORATORY SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Lab</th>
<th>Activity</th>
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<tbody>
<tr>
<td>Aug 28</td>
<td>-</td>
<td>No Labs</td>
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<tr>
<td>Sep 04</td>
<td>-</td>
<td>No Labs</td>
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</tbody>
</table>
| 11     | 1   | Introduction  
|        |     | PowerPoint set- *Soil Properties* and Land Use  
|        |     | Lab Reports-Soil Science Society of America (SSSA) format  
|        |     | **Assignment 1:** Constructing scientific tables and figures |
| 18     | 2   | Soil Formation and Landscapes  
|        |     | Soil-forming Factors Video  
|        |     | Walking Tour: Soils and landforms near Lanana Creek  
|        |     | **Assignment 1 due** |
| 25     | 3   | SFA Experimental Forest  
|        |     | Woden soil profile description (Typic Paleudalf)  
|        |     | **Quiz (Labs 1 and 2)** |
| Oct 02 | 4   | SFA Experimental Forest  
|        |     | Mantachie soil profile description (Fluventic Endoaquept)  
|        |     | View Bowie soil profile (Plinthic Paleudult)  
|        |     | View Nacogdoches soil profile (Rhodic Paleudalf) |
| 9      | 5   | Laboratory  
|        |     | Soil texture  
|        |     | Water movement video  
<p>|        |     | <strong>Report Due (Labs 3 and 4)</strong> |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Lab</th>
<th>Study Area/Activity</th>
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| 16    | 6   | Laboratory
|       |     | Bulk density, particle density, percent pore space
|       |     | Prepare samples for field capacity and wilting coefficient determinations |
| 23    | 7   | Tonkawa Area
|       |     | Typic Quartzipsamment
|       |     | Aquic Quartzipsamment
|       |     | Typic Psammaquent
|       |     | Complete moisture coefficients
|       |     | **Report Due (Labs 5 and 6)** |
| 30    | 8   | Laboratory
|       |     | Soil microorganisms - start
|       |     | Soil nutrient video
|       |     | **Quiz (Lab 7)** |
| Nov 06 | 9  | Laboratory
|       |     | Soil chemistry - SFA Soil, Plant, and Water Analysis Laboratory Tour
|       |     | Finish microorganisms |
| 13    | 10  | Laboratory
|       |     | Soil moisture, strength, and respiration measurements
|       |     | Soil Survey Report Assigned
|       |     | **Report Due (Labs 8 and 9)** |
| 20    |     | No Labs – Thanksgiving Break |
| 27    | 11  | USDA Natural Resources Conservation Service-East Texas Plant Materials Center |
| Dec 04 | 12 | Laboratory
|       |     | **Soil Survey Report Due**
|       |     | **Quiz (Labs 10 and 11)**
|       |     | Lab evaluation |