Soils in Construction

Syllabus

Instructor: Kenneth W. Farrish, PhD, CPSS
Room 108 Forestry Lab Building
(936) 468-2475
kfarrish@sfasu.edu
Office hours: M and W 8:00 - 10:30am
T and Th 8:00 – 9:00am and 1:30 to 2:30pm

Department: Environmental Science: Lecture: MW 8:00-8:50, Lab: R 2:00–4:50

Laboratory Instructor: Kenneth Farrish

Text: TBA

Course Description: Three semester hours, two hours lecture and three hours laboratory per week. The physical and chemical properties of soils, with a focus on management of soils at construction sites. Required field trips. Prerequisite: PHYS 1305/1105 – General Physics 1 and Lab

Course Objectives: The primary objective of this course is to make the student aware of the importance of understanding soil properties and how they affect construction projects. This required course for the interdisciplinary construction management major will cover aspects of soil physical and chemical properties, management of soils at construction sites, and interpretation of soil testing reports. This required course will address the needs of the construction management major.

Program Learning Outcomes: BS Environmental Science
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.
B.S. Environmental Science Program Learning Outcomes

<table>
<thead>
<tr>
<th>Course</th>
<th>PLO 1 Environmental Assessment</th>
<th>PLO2 Environmental Management</th>
<th>PLO3 Environmental Policy &amp; Professional Ethics</th>
<th>PLO4 Critical Thinking, Oral &amp; Written Communication</th>
<th>PLO5 Professional Career &amp;/or Graduate Degree Program</th>
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<tbody>
<tr>
<td>ENVR 3320/3020</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:

Students will develop understanding of relevant soil science terminology that apply to construction management activities.

Students will develop understanding of basic soil physical and chemical properties that affect construction management activities.

Students will develop understanding of soil sampling and laboratory testing of soil materials from construction sites.

Students will develop understanding of the importance of and the ability to interpret soil testing reports.

Course Calendar:

<table>
<thead>
<tr>
<th>Lecture Topics</th>
<th>Dates*</th>
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<tbody>
<tr>
<td>Introduction to Soil Science</td>
<td>8/23, 8/25</td>
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<tr>
<td>Soil Formation and Morphology</td>
<td>8/30, 9/01, 9/03</td>
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<td>Soil Physical Properties</td>
<td>9/06, 9/08, 9/13, 9/15</td>
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<tr>
<td><strong>EXAM 1</strong></td>
<td>9/20</td>
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<tr>
<td>Soil Chemical Properties and Clays</td>
<td>9/22, 9/27, 9/29</td>
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<td>Topic</td>
<td>Dates</td>
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<tr>
<td>Soils and Hydrology</td>
<td>10/04, 10/06, 10/11</td>
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<td>Soil Index Properties</td>
<td>10/13</td>
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<td>Stress Analysis and Engineering Properties</td>
<td>10/18</td>
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<td><strong>EXAM 2</strong></td>
<td>10/20</td>
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<tr>
<td>Interpretation of Soils Reports</td>
<td>10/25</td>
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<tr>
<td>Embankment Construction and Control</td>
<td>10/27</td>
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<tr>
<td>Dewatering</td>
<td>11/01</td>
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<td>Excavations and Excavation Supports</td>
<td>11/03</td>
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<td><strong>EXAM 3</strong></td>
<td>11/08</td>
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<tr>
<td>Foundation Construction and Soils</td>
<td>11/10</td>
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<td>Construction Access and Haul Roads</td>
<td>11/15</td>
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<td>Controlling Soil Erosion</td>
<td>11/17</td>
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<td><strong>Fall Break</strong></td>
<td>11/20</td>
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<tr>
<td>Case Study Presentations – Project Fails</td>
<td>11/29, 12/01</td>
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<td><strong>EXAM 4</strong></td>
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* Schedule likely to change

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 laboratory reports, quizzes, case study presentation (in lecture section), and one double weighted assignment.

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 unexcused absence.

E. Other Policies
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.

See the complete policy at: 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.

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/.

Mental Health and Wellness
SFA values students’ mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support students' mental health and wellness. Many of these resources are free, and all of them are confidential.
On-campus Resources:
SFA Counseling Service
www.sfasu.edu/counselingservices
Rusk Building, 3rd Floor
936-468-1041

SFA Human Services Counseling Clinic
www.sfasu.edu/humanservices/139.asp
Human Services, Room 202
936-468-1041

Crisis Resources:
Burke 24-hour crisis line: 1.800.392.8343S
Suicide Prevention Lifeline: 1.800.273.TALK (8255)
Crisis Text Line: Text HELLO to 741-741

**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 may be grounds for dismissal from class or other penalties.

**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 10.4). 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. Please read the complete policy at: http://www.sfasu.edu/policies/student-code-of-conduct_10.4.pdf