

**Sam Houston State University**  
**Department of Agricultural Sciences**  
**Fall 2017**

**COURSE** PLSC 3440 - Soil Science (4 credit hours)  
**NUMBER/TITLE:** Lecture: 210C Fred Pirkle TR 11:00 AM – 12:20 PM  
Lab: 219 Farrington Bldg. R 1 – 2:50 PM or 3-4:50 PM

**INSTRUCTOR:** Dr. Tim Pannkuk, Associate Professor  
450H Pirkle Bldg. 294-3333 [Pannkuk@shsu.edu](mailto:Pannkuk@shsu.edu)  
Office Hours: MW 8 – 10; TR 9 - 10; F afternoon by appointment

**TEXT:** Elements of the Nature & Properties of Soils, 3<sup>rd</sup> Ed., Brady & Weil, PrenHall Publ.  
Readings from the text are required

Soil Science Lab Manual, Study Guide, & Lecture Supplement Fall 2017 Ed. This manual is mandatory and can be purchased from Eagle Graphics.

**COURSE OBJECTIVES:**

Following completion of this course, students should be able to demonstrate proficiency in the areas of soil science covered in the course instructional objectives (included in the Lab Manual and Study Guide).

**COURSE OUTLINE**

**READING ASSIGNMENTS**

	Section
I. Introduction	
A. Importance of soil	1:1-5
B. Composition of soils	1:9-13, 15, 16
II. Soil Origin, Formation and Morphology	2
A. Mineral weathering	
B. Soil forming factors	
C. Classification of soil parent materials/land forms	
D. Development of the soil profile/morphology	
III. Physical Properties of Soils	
A. Soil texture & fragments	4:2-3
B. Soil structure	4:4-6
C. Soil density	4:7
D. Soil porosity and permeability	4:8
E. Soil air	7:1-7
F. Soil color	4:1
G. Soil temperature	7:8-12
IV. Soil taxonomy	3:1, 4-16, 19
V. Soil Water	5
A. Water chemistry	
B. Soil water content	
C. Soil water potential	
D. Soils as water reservoirs & determining content	
E. Soil water movement	
F. Water uptake by plants	
G. Consumptive use and water efficiency	

H. Reducing water losses	
VI. Soil Biology	10:1-14
A. Soil Animals	
B. Plants and soil	
C. Soil fungi	
D. Soil protista	
E. Soil monera	
F. Conditions for microbial activity	
VII. Soil Organic Matter	11:1-8, 10
A. Composition of organic matter	
B. Decomposition of organic matter	
C. Effects of soil organic matter	
D. Organic soil amendments	
VIII. Soil Colloids and Chemical Properties	8:1-12,15
A. Soil clays	
B. Organic colloids - Humus	
C. Cation exchange and CEC	
D. Anion exchange	
E. Soil reaction (pH) and liming	
F. Buffering capacity of soils	
IX. Problem Soils	
A. Acid Soils and Their Management	Chapter 9
B. Saline and sodic soils	Chapter 9
C. Eroded soils and soil conservation	Chapter 14
D. Soils and soil pollution	selected readings in chapters 13 & 15
X. Fertilizers and Fertilizer Use	12:1, 3, 4, 7, 8
A. The fertilizer elements	

**COURSE EVALUATION:**

Lecture exams 3 @ 100 points	300
Pop Quizzes/Assignments (about 5)	50
Final Exam ( <b>comprehensive</b> )	200
Laboratory Questions/Quizzes/Assignments	<u>200</u>
	750

**GRADING SCALE:**

<u>Grade</u>	<u>Points Earned</u>
A	675 - 750
B	600 - 674
C	525 - 599
D	450 - 524
F	449 or less

**Final Exam:** Thursday Dec. 7<sup>th</sup> @ 12 - 2 PM

**\*\*DO NOT ASK FOR EXTRA CREDIT WORK OR FREE POINTS\*\***

**DEPARTMENT OF AGRICULTURAL SCIENCES ATTENDANCE POLICY**

1. Regular and punctual attendance is expected of each student in the Department of Agricultural Sciences at Sam Houston State University.
2. Each faculty member will keep a written record of student attendance.

3. **If a student misses three or more hours**, the student's grade will be reduced by one letter grade. Additional penalties may be assessed at the discretion of the instructor.
4. Three unexcused or unjustified tardies or early departures are considered as one absence.
5. Excused absences must be documented by the student with a letter of confirmation from the sponsoring student organization, professor or doctor. Exemptions will include participation in departmental activities when prior approval is attained from the Department Chair.
6. No exams or assignments will be given at alternative times unless arrangements are made with the professor/instructor before the scheduled activity occurs.

### **ACADEMIC DISHONESTY**

*All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.*

### **CLASSROOM RULES OF CONDUCT**

*Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Cellular telephones must be turned off before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.*

### **TELEPHONE AND ELECTRONIC DEVICES**

*The use by students of electronic devices that perform the function of a telephone or text messenger during class-time is prohibited. Arrangements for handling potential emergency situations may be granted at my discretion. Failure to comply with this policy could result in expulsion from the classroom or with multiple offenses, failure of the course. Any use of a telephone or text messenger or any device that performs these functions during a test period is prohibited. These devices should not be present during a test or should be stored securely in such a way that they cannot be seen or used by the student. Even the visible presence of such a device during the test period will result in a zero for that test. Use of these devices during a test is considered de facto evidence of cheating and could result in a charge of academic dishonesty*

### **VISITORS IN THE CLASSROOM**

*Unannounced visitors to class must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom.*

## **STUDENT ABSENCES ON RELIGIOUS HOLY DAYS POLICY**

*Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.*

*University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). This request must be made in the first fifteen days of the semester or the first seven days of a summer session in which the absence(s) will occur. The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed.*

## **STUDENTS WITH DISABILITIES POLICY:**

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail [disability@shsu.edu](mailto:disability@shsu.edu)). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see:

<http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>

**BRACE  
YOURSELVES**

**MOST ANSWERS TO YOUR  
QUESTIONS ARE IN SYLLABUS**

[memegenerator.net](http://memegenerator.net)