

**PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS**

**INTRODUCTION TO SOIL SCIENCE
AGRI 1050**

Class Hours: 3.0

Laboratory Hours: 2.0

Credit Hours: 4.0

Revised: Spring 2017

Catalog Course Description

This course explores differences in soils; soil genesis; physical, chemical, and biological properties of soil; relation of soil to land use and pollution; soil management relative to tillage, erosion, moisture supply, and temperature, aeration, fertility and plant nutrition as an introduction to the study of agriculture.

Prerequisites

None

Textbook(s) and Other Course Materials

Brady, N.C. & R.R. Weil. 2000. *Elements of nature and Properties of Soils*. Prentice-Hall.

Week/Unit/Topic Basis

Week	Topic
1.	Course introduction and mechanics; Soils as a natural body; Profiles
2.	Profiles, Soil forming factors; Soil Orders and Classification
3.	Exam 1
4.	Physical properties: density, porosity, temperature, etc.; Soil Water and Water Conservation
5.	Drainage and irrigation; Soil Biology and ecology; Exam 2
6.	Soil organic matter and carbon cycling; Chemical Properties; Clays; Ion exchange
7.	Soil pH; Liming; Saline and Sodic Soils
8.	Soil nitrogen; Nitrogen cycle; Exam 3
9.	Soil phosphorus, potassium, and fertility
10.	Soil testing; Plant analysis; Nutrient management
11.	Soil erosion and erosion control; Universal soil loss
12.	Exam 4; Tillage systems, precision farming
13.	Forest soils
14.	Animal wastes; Organic gardening and farming; Chemical contamination
15.	Final Exam Period

Course Goals

NOTE: Roman numerals after course goals reference TBR's general education goals.

The course will

- A. Expand student understanding of the basics of soil science, soil properties and soil formations. V.3, V.4
- B. Extend student understanding of the basic soil terminology, classification and conservation. V.3, V.4
- C. Guide students to understand chemical properties surrounding soil pH, fertilization and nutrient cycles. V.2, V.3, V.4, V.5
- D. Expand student understanding of soil erosion, erosion control and sustainable agriculture. V.3, V.5
- E. Enhance student knowledge of the importance of soil conservation and conservation practices. V.3, V.4, V.5

Expected Student Learning Outcomes

NOTE: Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

The student will

- 1. Classify soils into one of the profiles and Orders of Soil Classification. A, B, C
- 2. Determine soil density and porosity. A, B
- 3. Describe and identify soils by organic matter, sand, silt and clay composition. A, B, C
- 4. Differentiate the variables required for correct fertilizer applications. A, B, D
- 5. Categorize the basic values of commercial fertilizers listed in standard N, P, and K contents. C, D
- 6. Explain the factors leading to excessive soil erosion and how to control them. C, D, E

Evaluation

Testing Procedures

75% of grade

Each lecture unit will be evaluated using one or more tests totaling 100 points. Exams will be a mix of discussion questions and objective questions. There are no makeup lecture tests. There will be a **mandatory** comprehensive final for the course worth 100 points. Failure to take the comprehensive final will forfeit any bonus points earned during the semester. The comprehensive final may be used to take the place of one missed exam if there is evidence of a valid and reasonable excuse. The comprehensive final exam score may also be used to replace the lowest unit exam score if all exams were attempted. The additional 50 points associated with lecture will be earned by doing a variety of activities determined by your instructor.

Students will receive one grade for AGRI 1050. The total number of points on which your grade will be based is 865. In lecture, students may accumulate as many as 650

points, which constitutes 75% of the grade. In lab, students may accumulate as many as 215 points, which constitutes 25% of the grade.

Laboratory Expectations

25% of grade

Students are expected to go to the appropriate laboratory for which they are enrolled and complete the assignments in a timely manner. Laboratory work will not be accepted late, and students must have attended the lab for which work was being substituted.

Students are expected to dress appropriately for the laboratory to minimize risk to personal safety. No open-toed shoes are allowed, and garments that cover the legs are recommended. Students are required to report to their laboratory instructor any concern for personal safety or injury sustained during various exercises.

Students are encouraged to work together to complete the exercises in a timely fashion but not to plagiarize lab work nor communicate during the practical.

During and after each lab exercise, students are required to complete the post-laboratory report. These post-laboratory reports will be collected and graded on 6 randomly selected dates. Each graded set of post laboratory report questions will be worth 12 points. Laboratory reports will not be accepted late.

Students are required to read the scheduled lab exercise before coming to class.

Students will write a formal scientific paper dealing with a lab exercise selected by the instructor. The report will include an introduction, methods and materials, results, conclusion, and bibliography. A draft version of the formal report must be turned in by week 5. The draft must have text information in ALL 5 sections, data, references, and be typed. The instructor will not grade the draft but will make suggestions for improvement to be incorporated into the final paper. The final laboratory report will be due week 8 and is worth 40 points. Failure to turn in a draft version will reduce the possible points that can be earned for the paper from 40 to 30.

Drinks, food, and tobacco products are prohibited in the classroom or laboratory.

Other Evaluation Methods

Students may be required to read supplemental articles or papers on reserve in the library.

Grading Scale

90 - 100	779-865 pts	A
87 - 89	753-778 pts	B+
80 - 86	692-752 pts	B
77 - 79	666-691 pts	C+
70 - 76	606-665 pts	C
60 - 69	519-605 pts	D
0 - 59	0-518 pts	F

Policies

Attendance Policy

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

Academic Dishonesty

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one's own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

Accommodations for Disabilities

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. [Disability Services](#) (<http://www.pstcc.edu/sswd/>) may be contacted via [Disability Services email](#) or by visiting Alexander 130.

Other Policies

CLASSROOM DISRUPTIONS: disruptions during lecture or laboratory, any form of communication during testing, or any other form of behavior that may prove distracting to others will not be tolerated and may lower the final grade and/or result in removal from the course. Cell phones must be in the off or vibrate mode and should not be visible

during class time. Students are expected to work on biology related materials and participate in meaningful discussion where time permits.

Visitors are not allowed in the classroom or the laboratory.

LABORATORY SUBSTITUTION POLICY: There may be a time during the semester that students will not be able to attend a regularly scheduled laboratory section. Since attendance is so critical to the laboratory grade, students will be allowed to attend an alternate lab section ONE time during the semester. Lab substitution is only allowed in the case of an emergency and with adequate approval. Students must inform their regular instructor, and obtain permission and documentation from the substituting instructor showing evidence of attendance in an alternate lab.