**SOIL 4234: Soil Nutrient Management (4 credits)**

**Fall 2021**

Three 1-hour Lectures: Monday, Wednesday, and Friday at 11:30 am

One 2-hour Laboratory: Wednesday at 1:30 pm or 3:30 pm

Lectures in AGH 201

Laboratories in AGH 161

**Lecture Instructor:** Dr. Brian Arnall

 373 Ag Hall

 Phone: (405)744-1722

 E-mail: b.arnall@okstate.edu

**Lab Instructors:**

Section 1 (1:30) Raedan Sharry

 468 Ag Hall

 E-mail: rsharry@okstate.edu

Section 2 (3:30)

 Michaela Smith

 480 Ag Hall

 Email: Michaela.smith10@okstate.edu

**Course Website:** <http://pss.okstate.edu/soil4234>

**Prerequisites:**

SOIL 2124 – Fundamentals of Soil Science, or consent of instructor

**Text:**

Weekly laboratory procedures, assignment sheets, and literature will be available on the course website, and will not be provided by the instructors on a weekly basis. Students are required to print out all text required for lab to that lab.

**Course E-mail List:**

We will use a course email list to communicate new administrative information about course activities. You can also send us emails with questions about topics covered in class. For general interest questions, we will copy the question without your name and send the question and our answer to the class.

**Attendance:**

Regular class attendance is mandatory. Students with excessive absences, 4 or more, will receive zero credit for the laboratory portion of this course.

**Objective:**

Introduction to and application of soil testing and plant analysis procedures and the interpretation of soil physical and chemical properties in order to make accurate fertilizer recommendations.

**Laboratory:**

In the laboratory, you will learn how to conduct some of the common soil testing methods used by commercial soil testing laboratories. Many of these “wet” labs will involve the use of concentrated acids and bases. Therefore, safety is emphasized. Make sure you locate the safety shower and eyewash the first day of the laboratory. Safety glasses, lab coats, and other personal protection equipment are available for use in all labs. Follow the oral direction of your instructors and the written safety precautions in your laboratory handouts at all times. Please do not wear your best clothes to lab as some of the chemicals used in the lab may ruin them. Closed-toe shoes are required while conducting all laboratory exercises.

Laboratory procedures will be provided to you the week before the laboratory. You are required to know the laboratory procedures before coming to the lab. A Pre-Lab Exercise covering the lab procedures and calculations will be given for you to complete prior to attending the lab. These exercises must be turned in at the beginning of lab to receive credit. Scores less than 3 out of 5 will result in an automatic 20% reduction in the lab report for that week. Take these Pre-Lab Exercises seriously.

Accuracy is expected in the laboratory. Lack of attention to detail in the laboratory procedures will negatively impact your results, and therefore your laboratory grade. Laboratory reports will consist of the data sheet in the lab handout, calculations used to derive your data, and answers to additional questions related to the lab exercise.

Lab reports will generally be due at the beginning of the following week’s scheduled laboratory period or at another time specified by your lab instructor. Late laboratory reports will be accepted with a 50% penalty if turned in before the following week’s scheduled laboratory period. However, laboratory reports will not receive credit after this time unless specific arrangements have been made with your assigned laboratory instructor.

If you are unable to attend your scheduled laboratory, you must notify your laboratory instructors at least one week in advance. No make up labs will be allowed unless you have made previous arrangements with your laboratory instructor prior to your scheduled laboratory.

**Grading System: Lab constitutes 25% of your semester grade**

Weekly lab reports 220 points

Pre-Lab Exercises 60 points

Lab Final 80 points

Total 360 points

**Course Grading Policy:**

The laboratory constitutes 25% of your semester grade. The overall grading policy will be detailed in the lecture portion of this class.

**Academic Dishonesty:**

All members of the Oklahoma State University community are entrusted with academic integrity, which encompasses the fundamental values of honesty, trust, respect, fairness, and responsibility. Therefore, you are expected to demonstrate academic integrity through the following actions:

• understand and uphold the academic integrity guidelines established by the University and the instructor.

• present your own work for evaluation by your instructors.

• appropriately cite the words and ideas of others.

• protect your work from misuse.

• accept responsibility for your own actions.

• treat instructors and members of the Academic Integrity Panel with respect when violations of academic integrity are examined or appealed.

• trust instructors and members of the Academic Integrity Panel to enforce the academic integrity policy and procedures.

You are urged to sign the OSU Commitment to Academic Integrity statement “I will respect Oklahoma State University's commitment to academic integrity and uphold the values of honesty and responsibility that preserve our academic community.” and inform other students or notify instructors when you observe violations of academic integrity.

Any incidents of academic dishonesty will be taken to Dr. Arnall and dealt with in accordance to Oklahoma State University’s Academic Integrity Policy.

Oklahoma State University is committed to the maintenance of the highest standards of integrity and ethical conduct of its members. This level of ethical behavior and integrity will be maintained in this course. Participating in a behavior that violates academic integrity (e.g., unauthorized collaboration, plagiarism, multiple submissions, cheating on examinations, fabricating information, helping another person cheat, unauthorized advance access to examinations, altering or destroying the work of others, and fraudulently altering academic records) will result in your being sanctioned.  Violations may subject you to disciplinary action including the following: receiving a failing grade on an assignment, examination or course, receiving a notation of a violation of academic integrity on your transcript (F!), and being suspended from the University.  You have the right to appeal the charge.  Contact the Office of Academic Affairs, 101 Whitehurst, 405-744-5627, academicintegrity.okstate.edu.

Oklahoma State University Academic Integrity Webpage

http://academicintegrity.okstate.edu/

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| **SOIL 4234: Soil Nutrient Management****Fall 2021 Laboratory Schedule** |
| **Date** | **Lab #** | **Lab Topic** | **Lab Report Point Value** |
| Aug. 18 | 1 | Lab Orientation and Chemistry Review | 10 |
| 25 | 2 | In-field soil sampling | 10 |
| Sept. 1 | 3 | Soil pH and Liming | 15 |
|  8 | 4 | CEC & Nutrient Mobility | 20 |
| 15 | 5 | Soil Test for Nitrogen | 15 |
| 22 | 6 | Soil Test for P & K | 10 |
| 29 | 7 | Carbon, nitrogen, and organic matter | 20 |
| Oct. 6  | 8 | Saline and Sodic Soils | 20 |
| 13 | 9 | Micronutrients | 20 |
| 20 | 10 | Fertilizer Calculations | 20 |
| 27 | 11 | Precision Ag | 20 |
| Nov. 3 |  | NO LAB | 15 |
| 10 | 12 | Nitrogen Volatilization |  |
| 17 |  | Optional Lab Review | 10 |
| 24 |  | THANKSGIVING BREAK |  |
| Dec. 1 |  | Lab Final | 80 |
| Dec 6-10 |  | Finals Week |  |
| \*\*\* course schedule is subject to change and a new version will be posted on the course website as needed \*\*\* |