

**CSEM/PSAS 448: Soil Fertility Evaluation**  
**Spring Semester 2014**  
**Tuesday: 2:00 - 4:50 p.m., Agriculture Building, Room 167**

**Instructor:** Dr. Rachel Cook, rachel.cook@siu.edu, Ag Bldg Room 161E, Ph: 453-1795

**Office Hours:** Monday, Wednesday, and Friday 11:00 a.m. - 12:00 p.m. or by appointment

**Suggested Text:** "Soil Fertility and Fertilizers - An Introduction to Nutrient Management", 7<sup>th</sup> Edition by J.L. Havlin, J.D. Beaton, S.L. Tisdale, and W.L. Nelson.

**Purpose of the Course:** This is a 2-credit hour course designed to introduce the student to Soil Testing and the applied concepts of Fertilizers, Soil Fertility, and Nutrient Management. This will include but is not limited to the following objectives:

- A. Understand plant nutrient use and the importance of nutrients in the soil-plant system.
- B. Conduct "hands-on" soil testing as found in commercial industry.
- C. Understand the relationships between fertilizers, soil testing, and the development of nutrient management decisions that are social, economic, and environmentally acceptable.

**Course Requirements:**

- A. **Lectures:** Materials will be covered using PowerPoint and will be posted on D2L after class.
- C. **Tests:** The midterm will cover all materials given up to that date since the previous test. This will be 100-point exam covering lectures and laboratory practicals. A final, comprehensive examination, valued at 200 points, will also be given. **No make-up exams** unless arranged **prior** to the scheduled exam for an **excusable** absence. The dates for the examinations will be as follows:

**Midterm:** Tues, March 4<sup>th</sup>

**Final Exam:** Wed, May 7, 2014, 3:10-5:10 p.m.

- D. There will be weekly quizzes and laboratory practicals. These will be worth approximately 10-20 points each. There will also be a comprehensive write-up of the laboratory information collected and the nutrient management recommendations that is worth 100 points. Due date will be discussed in class.

**Grading:** Grades will be based upon a 90% - 80% - 70% - 60% grading scale with NO curving of the final grades. Turning in assignments after the due date will result in declining credit of 5% (1/2 letter grade) for *every day* that they are late.

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Midterm (100 pts)	25% of course grade
Final Exam (200 pts)	25% of course grade
Quizzes (100 pts)	12.5% of course grade
Practicals (200pts)	25% of course grade
Laboratory Report (100 pts)	12.5% of course grade

*\*Exact point totals are subject to change*

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**CSEM 448 FINAL EXAM: Wed, May 7, 2014**  
**3:10 p.m. – 5:10 p.m.**

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**Presentation of Course Materials**

Jan. 14 <sup>th</sup>	Laboratory Check-In and discussion of the course activities.
	Practical 1: Soil Sampling - collection, handling, and preparation. Soil test spatial and temporal variability.
Jan. 21 <sup>th</sup>	Practical 2: Field sampling (dependent on weather) or Chemistry Review and Fertilizer Formulations, i.e. - Dry vs. Liquid Formulations
Jan 28 <sup>st</sup>	Practical 2: Guest lecture
Feb. 4 <sup>th</sup>	Practical 3: Measurement of the soil pH.
Feb. 11 <sup>th</sup>	Practical 4: Limestone Requirements based upon soil pH.
Feb. 18 <sup>nd</sup>	Practical 5: Phosphorus Chemistry and the determination of readily available P in soils by the Bray P1 Test
Feb 25 <sup>th</sup>	Practical 6: Phosphorus fertilization: build-up and maintenance
Mar. 4 <sup>th</sup>	Practical 7: Midterm
Mar. 8 <sup>th</sup> - Mar. 16 <sup>th</sup>	SPRING BREAK
Mar. 18 <sup>th</sup>	Practical 8: Potassium Chemistry and the determination of readily exchangeable K in soils by the Ammonium Acetate K Test

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Mar. 25 <sup>th</sup>	Practical 9: Potassium fertilizer: build-up and maintenance
Apr. 1 <sup>st</sup>	Practical 10: Calcium, Magnesium, and Sodium in soils and CEC.
Apr. 8 <sup>th</sup>	Practical 10: Organic Matter in soils and organic matter determination
April 15 <sup>th</sup>	Practical 11: Soil Evaluation Papers are DUE.
April 22 <sup>th</sup>	Practical 12: Micronutrients in Soils; Plant Tissue Testing Discussion.
April 29 <sup>th</sup>	Practical 13: Manure nutrient management. Laboratory Check-out.
MAY 7 <sup>th</sup>	FINAL EXAMINATION, 3:10 p.m. – 5:10 p.m.

**Note: Changes to syllabus may be made at the instructor's discretion.**

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**The Academic Honesty Policy will follow the Student Conduct Code, Section II, Article A:**

Article A. Acts of Academic Dishonesty

In keeping with the principles and values of the University, students shall not:

1. Plagiarize or represent the work of another as ones own work;
  2. Prepare work for another that is to be used as that persons own work;
  3. Cheat by any method or means;
  4. Knowingly or willfully falsify or manufacture scientific or educational data and represent the same to be the result of scientific or scholarly experiment or research;
  5. Knowingly furnish false information to a university official relative to academic matters;
  6. Solicit, aid, abet, conceal, or attempt acts of academic dishonesty.
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**Emergency Procedures:**

Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on the BERT's website at [www.bert.siu.edu](http://www.bert.siu.edu), Department of Public Safety's website at [www.dps.siu.edu](http://www.dps.siu.edu) (Disaster Drop Down), and in the Emergency Response Guidelines pamphlet. Know how to respond to each type of emergency.

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**Americans with Disabilities (ADA) Statement:**

Southern Illinois University Carbondale encourages all persons with disabilities requiring special accommodations to meet the expectations of this course to bring this to the attention of the instructor as soon as possible. Written documentation of the disability should be submitted during the first week of the semester along with a request for special accommodations. Please contact the SIU Disability Support Services (DSS) to facilitate requests:

SIU Disability Support Services  
Woody Hall, B-150  
Mail Code 4705  
Carbondale, Illinois 62901  
[DSSsiu@siu.edu](mailto:DSSsiu@siu.edu)  
Phone 618-453-5738  
Fax 618-453-5700  
TTY 618-453-2293