

**CSEM 390/PSAS 590: Current Topics in Soils and Agronomy**  
**Fall 2014**  
**Tues/Thurs 10:00-10:50 pm, Agriculture Building, Room 216**  
**Wed 2:00-3:50 pm, Agriculture Building, Room 167**

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

**Office Hours:** Tuesday & Thursday 11:00 a.m. - 12:00 p.m. or by appointment

**Readings:** Texts will be distributed in class or on D2L: [online.siu.edu](http://online.siu.edu)

**Purpose of the Course:** This is a 3-credit hour course designed to introduce the student to the current topics in soil science and agriculture. It will be taught with an emphasis on interactive class discussion, writing, and critical thinking skills. The objectives of the course are for the student to be able to:

- A. Articulate and discuss current issues in soils and agriculture
- B. Critically examine the quality of popular and/or scientific information
- C. Write concise summaries of information from peer-reviewed journal articles
- D. Create an experimental design for testing a hypothesis

**Course Requirements:**

**Lectures:** Materials will typically be covered in PowerPoint presentations and will be posted in D2L after lecture.

**Tests:** The Midterm and Final format will be discussed prior to the exams. **No make-up exams** unless arranged **prior** to the scheduled exam.

**Annotated Bibliographies:** An annotated bibliography consists of about 3-5 sentences summarizing the purpose and findings of a paper. Careful reading of the literature is essential to successful discussions. Students are expected to take concise and organized notes while reading. An annotated bibliography will be due BEFORE THE BEGINNING OF LAB in D2L each Wednesday. **Late assignments will not be accepted.** Each assignment will be worth 10 pts each.

**Lab Practical:** A “cover crop challenge” will be this year’s lab practical. Each student will do a field study to test the “optimal” cover crop management. We will mark off small plots at the Agronomy Research Center for each student to test their hypothesis. The student with the most aboveground biomass and nitrogen catchment by the last week of November wins the challenge and will receive extra credit. Each student will write up a report worth 50 pts.

**Seminar Presentation:** During Thursday class periods a pair of undergraduate students or an individual graduate student will present a 40 minute topic of their choice and lead a 10 minute class discussion. Grading criteria for the seminars are attached in the rubric at the end of the syllabus. Each student will prepare a list of 5 related, peer reviewed journal articles. This list must be submitted at least 1 week prior to the presentation. The list must include the FULL CITATION (author, publication year, title, journal). Make sure these articles are accessible through the library

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BEFORE listing them. An annotated bibliography will be due for these 5 papers on the day of the seminar. Any standard citation format is acceptable, just be consistent.

**Graduate Students:** Graduate students will also be required to turn in an original Research Proposal based on one of the current topics or another topic pertaining to the graduate student's research. Proposal writing is one of the most important skills in academia and industry, and is a requirement for the graduate program. **A two-page "pre-proposal" will be due before class on Wed, Oct 8<sup>th</sup>.** This "pre-proposal" should contain at least 5 references, define a problem, background/motivation, objectives of the proposal, and a discussion of possible results. Additional information regarding the structure of the proposal will be discussed. Expected length will be 10-15 pages, 1.5 spacing, standard font and margins. **Proposals are due Friday Dec 5<sup>th</sup> in D2L by 11:59 pm.**

**Grading:** Grades will be based upon a 90% - 80% - 70% - 60% grading scale with NO curving of the final grades.

Breakdown of points:

150 points	Annotated Bibliographies (15 at 10 pts each)
100 points	Midterm
100 points	Seminar Presentation
50 points	Lab Practical
200 points	Final
100 points	Proposal (Grad Students Only)

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**MIDTERM EXAM: Wed. October 8<sup>th</sup>, 2014 2:00-3:50 pm**

**FINAL EXAM: Tues. December 9<sup>th</sup>, 2014 at 10:00-11:45 am**

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Week 1: Aug 19-21	Syllabus and topics; Writing exercise
Week 2: Aug 26-28	Cover crops
Week 3: Sept 2-4	Soil Health Tests
Week 4: Sept 9-11	Long-term effects of No-till
Week 5: Sept 16-18	Plant disease and Soil Management
Week 6: Sept 23-25	Enhance efficiency fertilizers and yield
Week 7: Sept 30-Oct 2	Enhanced efficiency fertilizers and nitrate leaching
Week 8: Oct 7-9	Enhanced efficiency fertilizers and N <sub>2</sub> O emissions
Week 9: Oct 14-16	Hypoxia in the Gulf - Nitrogen regulation & Chesapeake Bay
Week 10: Oct 21-23	Potassium "Paradox"
Week 11: Oct 28-30	Drones in Agriculture
Week 12: Nov 4-6	SSSA meeting (guest lectures)
Week 13: Nov 11-13	Gypsoil and soil structure
Week 14: Nov 18-20	Hydraulic Fracturing
Week 15: Nov 25-27	Organic agriculture
Week 16: Dec 2-4	Urban Soil Quality and Compost

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

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**RUBRIC FOR STUDENT LED CLASS AND DISCUSSION**

Student Name: \_\_\_\_\_

Presentation Date: \_\_\_\_\_

Topic: \_\_\_\_\_

	<u>Yes</u> <—————> <u>No</u>
Reading list submitted $\geq$ 1 week before seminar, follows directions	5 4 3 2 1 0
Ann. bibliography submitted at seminar, follows directions	5 4 3 2 1 0
Ann. bibliography demonstrates a careful, insightful reading of the papers	5 4 3 2 1 0
Total = _____ of 15	

<u>Presentation</u>	<u>Yes</u> <—————> <u>No</u>
Presentation covers the topic in adequate depth	5 4 3 2 1 0
Presentation is appropriately timed	5 4 3 2 1 0
Presentation is well organized	5 4 3 2 1 0
<i>Visual aids</i> (overheads, slides, etc.) are legible and high in quality	5 4 3 2 1 0
<i>Visual aids</i> (overheads, slides, etc.) are creative and useful to the presentation	5 4 3 2 1 0
Presentation is smooth and practiced, and <b><i>not</i></b> read from a text	5 4 3 2 1 0
Presentation is a thorough and accurate overview of the topic	5 4 3 2 1 0
Presentation utilizes all sources	10 9 7.5 4 0
Total = _____ of 45	

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<u>Facilitation of Class Discussion of Selected Reading</u>	<u>Yes</u> <—————> <u>No</u>
Discussion correctly pin-points the most interesting or controversial issue(s)	5 4 3 2 1 0
Student facilitator demonstrates a thorough familiarity with the topic	5 4 3 2 1 0
Student facilitator utilizes a list of interesting or controversial questions	5 4 3 2 1 0
Student facilitator gets all students to participate	5 4 3 2 1 0
Discussion stays on the subject	5 4 3 2 1 0
Student facilitators stimulate discussion when it's slow, and demonstrate adequate restraint when it's going well	5 4 3 2 1 0
<i>The seminar is a lively and interesting discussion of the week's topic</i>	10 9 7.5 4 0
	Total = _____ of 40

**Total Score = \_\_\_\_\_ of 100**

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RUBRIC FOR WRITTEN PROJECTS**

Student Name: \_\_\_\_\_ Topic: \_\_\_\_\_

<u>Preparation</u>	<u>Yes</u> <-----> <u>No</u>
Project proposal submitted on time, follows directions	10 9 7.5 4 0
List of references submitted on time, follows instructions	10 9 7.5 4 0
Total = _____ of 20	

<u>Quality of the Paper</u>	<u>Yes</u> <-----> <u>No</u>
Clear problem and statement objectives	5 4 3 2 1 0
Paper/Proposal is within required length	10 9 7.5 4 0
Paper/Proposal is well organized	10 9 7.5 4 0
Paper/Proposal is well written	10 9 7.5 4 0
Paper/Proposal has been proofed and is free from typographical, spelling, grammatical, and punctuation errors.	5 4 3 2 1 0
Paper/Proposal uses at least 2 figures that are legible and useful	5 4 3 2 1 0
Paper/Proposal utilizes multiple relevant journal articles	5 4 3 2 1 0
Referencing is dense and sufficient throughout the paper	10 9 7.5 4 0
<i>The paper/ proposal is of sufficient quality to make a meaningful contribution to the student's research requirement for their degree.</i>	20 18 15 8 0
Total = _____ of 100	

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

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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