Soil-Crop Management Systems
CS/SSC 462
Spring 2010
Tuesday and Thursday 8:30-9:45 am
SYLLABUS

Course description

CS/SSC 462 is a capstone course in soil-crop management that requires students to combine agronomic knowledge with analytical, managerial, and communication skills to address real-world problems in crop management.

Student Learning Outcomes

Students successfully completing this course will be able to:

1) Integrate the principles of soil and crop management into the environmentally sound management of cropping systems.
2) Utilize critical thinking principles for agronomic decision-making.
3) Apply current agronomic and farm management principles to crop production.

Prerequisites

CS(SSC) 462 is the capstone course for the Agronomy Curriculum. As such, we assume that students enrolled in this course have attained an appropriate agronomic knowledge base. Courses that should be completed prior to taking CS/SSC 462 include CS 213 Crops: Adaptation and Production, CS 414 Weed Science, SSC 341 Soil Fertility and Fertilizers, SSC 342 Soil Fertility Laboratory, and SSC 452 Soil Classification. Students lacking knowledge in these subject areas may encounter difficulties in this course.

Instructors

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Attendance policy

The course will have many exercises that require your participation. Thus, attendance is expected. If you must miss a class, contact the instructors prior to your absence to make arrangements for completing any missed assignments. The NCSU Attendance Policy can be found at:

http://www.ncsu.edu/policies/academic_affairs/pols_regs/REG205.00.4.php

To encourage attendance, unannounced quizzes, most often associated with the previous lecture or subject, will be given periodically throughout the semester.

Required textbook

There is no known text suitable for this course. Instructors will provide supporting documentation and handouts.

Student conduct

The NCSU Code of Student Conduct describes the kind of student behavior that disrupts and inhibits the normal functioning of the University and the actions that the University will take to protect the community from such disruption. It is your duty as a member of the University community to read, understand, and adhere to the Code of Student Conduct found at.  
http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php

Academic integrity

Any attempt at unfairly influencing the grade received for an academic exercise is considered academic dishonesty and will not be tolerated.
Standard of Classroom Behavior

In order to maintain a positive learning atmosphere in this class, it is important that you respect your classmates, the instructors, class guests, and yourself at all times. As a student, you have the right to expect an atmosphere that is conducive to learning. And, you also have the responsibility to make sure that a positive environment is maintained. Please refrain from the use of tobacco products, speaking in a disruptive manner, entering the classroom late, and any other activity that may disrupt the class.

Students with Special Needs

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please refer to information found at the following website: http://www.ncsu.edu/policies/academic_affairs/pols_regs/REG205.00.28.php.

Grading Procedures

You are expected to complete assignments on time. All assignments are due on the date provided in class. Considerations will be made for late completion of assignments, on a case by case basis, provided arrangements are made prior to the due date.

Exams in this course are scheduled for a 75-minute time period. Make-up exams will be allowed only for illness, emergencies, or prescheduled reasons.

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<th>Grading Scale</th>
<th>C+ = 77 B 79%</th>
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<tr>
<td>A+ = 97 B 100%</td>
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<td>A = 93 B 96%</td>
<td>C- = 70 B 72%</td>
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<td>A- = 90 B 92%</td>
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<td>Test 1(Soils, Havlin)</td>
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<td>Test 2(Crops, Jordan)</td>
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<td>Problem set (soils)</td>
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<td>Paper review and presentation</td>
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<td>Extension presentation</td>
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<td>Farm plan</td>
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"B+ = 87 B 89%  
B = 83 B 86%  
B- = 80 B 82%  
D = 63 B 66%  
D- = 60 B 62%  
F = <60%"
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Paper Review

Students will work in groups of two while reviewing a paper published in one of the 2008 issues of *Agronomy Journal*. These papers are summary articles rather than scientific articles. The group will be expected to prepare a brief written summary of the paper and will be expected to give a 5 to 10 minute oral presentation on the paper. Consider the following when preparing both your written and oral review.

What are the major points drawn from the paper?

What is the significance of this paper to North Carolina agriculture?

What is the significance of the paper to North Carolina State University’s land grant mission?

What is the significance for students graduating from North Carolina State University and moving into a career associated with agriculture?

The goal of this assignment is to increase your understanding of the some of the key historical issues associated with agronomy and to give you greater experience at synthesizing information you read.

The assignment is due the week after spring break.

Articles – Celebrate the Centennial [A Supplement to Agronomy Journal] 2008

1. *History, Achievements, and Current Status of Genetic Resources Conservation* (Damania)
2. *The Magruder Plots: Untangling the Puzzle* (Girma et al.)
3. *After 10,000 Years of Agriculture, Whither Agronomy?* (Miller)
5. *A Century of Agronomic Education* (Thien et al.)
6. *Teaching and Learning in Agronomy: One Hundred Years of Peer-Reviewed Conversations* (Grabau)
7. *Winds of Change: A Century of Agroclimate Research* (Steiner and Hatfield)
8. *No-Tillage Crop Production: A Revolution in Agriculture!* (Triplett and Dick)
9. *A Century of Women in Agronomy: Lessons from Diverse Life Stories* (McIntosh and Simmons)
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Extension Presentations

Students will work in groups of three while in the process of preparing presentations designed for farmers and their advisors for major agronomic crops in North Carolina (cotton, peanut, tobacco, corn, wheat, and soybean.) Generally, topics at grower meetings include general agronomy, pest management, and budgeting. There will be three in your group, and you can decide exactly how to approach this. You will have a minimum of 30 minutes and a maximum of 45 minutes for each crop presentation, and all three students in the group will be expected to present a portion of the information. It will be important to present key issues that are pertinent to growers. I will contact the Extension Specialists involved with these crops and ask them NOT to give you a slide set for your presentation. You can discuss the project with them, as their schedule permits, but we do not want you to present a canned presentation. I can also visit with you about the “grower meeting concept.”

The purpose of this assignment is to give you greater exposure to how recommendations are developed and used to manage the major agronomic crops in North Carolina, to help you gain a greater appreciation for the process of taking research-based information and presenting it to growers and their advisors, and to give you an opportunity to speak before your peers. As you move into an agriculturally-related career, this type of interaction will be important. Also, the class will be expected to ask you pertinent questions about the information you present and this will help you gain experience “speaking on your feet.” Finally, as you prepare your farm plan, going through this assignment will help you be more accurate in your development of the plan and will certainly help you prepare your crop calendars.

Presentations will be made during the latter part of March after spring break.
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Farm Plan

Objective: To provide students with an appreciation of critical management decisions related to nutrient management, soil resources, cropping systems, pest management, and marketing of crops in the Coastal Plain and Piedmont of North Carolina. The project is also designed to help students gain a greater appreciation of the complexity modern farming and to give students experience at pulling many aspects of farming together into central plan.

Procedure: Students will be divided into groups of three and will be given example farms, one in Sampson county and the other in Wake county. Using appropriate resources, students will develop a comprehensive plan for implementing management strategies to protect soil and environmental resources and ensure a viable economic farming enterprise. Students will prepare a written report and present a thorough description to the class. Criteria that should be considered include: soil loss, nutrient management, production and pest management strategies for each crop, and economic viability of each crop and the rotation scheme for each year and across all years. The plan must cover seven years. Crop budgets should be considered in development of cropping systems and crop/acreage mix. A complete crop calendar needs to be developed (as discussed in class) for each crop. The group needs to provide a narrative that explains each of the major decisions and assumptions presented in the plan.

Written and oral forms of the plan will be due in mid April.