

SYLLABUS
Geographic Information Systems in Agriculture

Fall Semester 2011

Course Number SOCR 377
3 Credit Hours

I.

A. Instructor:

Raj Khosla

Soil and Crop Sciences
Office: C013 Plant Science Building
Phone office: 491-1920

Email: raj.khosla@colostate.edu Email is one of the most convenient ways of communicating with me. I usually check my email several times a day.

Office Hours: Any time the door is open or the light is on. Alternatively, you can schedule a time with me and I will be there.

B. Teaching Assistant:

Louis Longchamps

W010 Plant Sciences Building
Soil & Crop Sciences
Phone office: 491-6237
Email: louis.longchamps@gmail.com

Office Hours: Wednesdays 10am to 12 noon

II. Course Schedule:

- A. **Lecture:** Tues. and Thurs. **12:30 pm** through **1:45pm**. Room #105 Military Science Bldg. (Alternate arrangements: lecture time may be re-scheduled as per class requirements)
- B. **Laboratory:** Scheduled for Thursdays 2:00 through 4:40pm. Room W-10 Precision Agriculture - GIS Lab in Plant Sciences Bldg
[You will be informed promptly where we will meet for which lab.]

For your lab project and home-works, you may work in my Precision Ag/ GIS Lab located in W-10 Plant Sciences Building. It is open from 9am to 4:30pm and you may complete your homework on the computers on the East Wall of the lab.

(Alternate arrangements: Lab time and place may be re-scheduled as per class requirements)

- C. **Field trip:** Aug 25th, Sep 1st, 8th, 22nd, 29th, and Oct 13th.
- D. **Midterm Exams:** September 13th and October 6th.
- E. **Final Examination:** Tuesday November 1st (Time: 12:30pm to 1:45pm)

III. Course Objectives:

Upon completion of this course, students will be able to:

1. Understand the principles and elements of Global Positioning systems (GPS)
2. Identify the errors associated with GPS systems
3. Understand the concepts and functioning of Differential Global Positioning Systems (DGPS)
4. Understand the concept of spatial variability
5. Realize the scope of precision farming and the know the precision farming cycle
6. Understand the potential benefits of Precision Agriculture
7. Do real-time field mapping and grid soil sampling
8. Understand variable rate nutrient and other agri-chemical digital application maps.
9. Monitor and map yield data and post processing of the yield maps
10. Work with precision farming hardware and software.

IV. Course Grading:

A. Midterm examination:	35 percent (15 + 20)
B. Home work Problems	15 percent
C. In class and take home lab assignments:	15 percent
D. Final lab project:	15 percent
E. Final Exam (Comprehensive):	20 percent

V. Text book:

The Precision-Farming Guide for Agriculturists: Editor John E. Kuhar. Published by Deere & Company, Moline, IL.

Other books, research papers and reading material will be reserved in the library or my lab for you to check out and do the assignments.