Course Syllabus
SOCR 720A – Advanced Plant Breeding Methods
Fall 2012 (2 Credits)

INSTRUCTOR

Dr. Scott Haley
C-136 Plant Science, 491-6483
scott.haley@colostate.edu
office hours by arrangement

MEETING TIME AND PLACE

9:00-9:50 AM – M, W, F W001 Plant Science Building

COURSE PREREQUISITES

Plant Breeding (SOCR460, or equivalent); three credits in statistics.

TEXTBOOK

There is no required textbook for this course. Fehr Vol. 1 will be used as a primary reference and several other reference sources will be made available.

LEARNING OBJECTIVES

- The successful student will develop an appreciation of key historical achievements in plant breeding.
- The successful student will develop an understanding of genetic gain theory and strategies for optimizing genetic gain in plant breeding programs.
- The successful student will develop an understanding of breeding methodologies used in self-pollinated and cross-pollinated crop breeding programs.
- The successful student will use classical and current literature to foster improved understanding of plant improvement and disciplines contributing to plant improvement.

EVALUATION

- Two take home quizzes and one final exam will be given during the semester. The quizzes (50 points each) will be relatively short, open book, and will cover only material since the previous quiz. The final (100 points) will be open-book and comprehensive. The quizzes and final exam will consist of predominantly short answer questions or problems.
- Each student will be required to give one research paper or topical presentation during the semester (50 points for presentation). Details on this activity will be provided.
- Each student will be required to lead two discussion sessions on a research paper during the semester (10 points each). Details on this activity will be provided.
- Three homework assignments will be given during the semester, each worth 20 points.
- Final assignment of grades will be according to a 90% A, 80% B, 70% C, 60% D, and <60% F scale calculated from the following activities:

Take home quizzes (2)	= 100 points
Final exam (1)	= 100 points
Presentation (1) + Questions (5)	= 100 points
Discussions (2) + Questions (18)	= 200 points
Homework assignments (3)	= 60 points
Total	= 560 points

Course Outline
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Week	Dates	Topic
1	Sept 24, 26, 28	Plant Breeding Perspectives
2	Oct 1, 3, 5	Reproduction & Basic Genetics
3	Oct 8, 10, 12	Heritability & Selection Response
4	Oct 15, 17, 19	Heritability & Selection Response
5	Oct 22, 24, 26	Self-Pollinated Crop Breeding Methods
6	Oct 29, 31, Nov 2	Self-Pollinated Crop Breeding Methods
7	Nov 5, 7, 9	Self-Pollinated Crop Breeding Methods
8	Nov 12, 14, 16	Cross-Pollinated Crop Breeding Methods
9	Nov 26, 28, 30	Cross-Pollinated Crop Breeding Methods
10	Dec 3, 5, 7	Cross-Pollinated Crop Breeding Methods

Take home final will be administered at the end of the last week of the course.