

Course Syllabus
SOCR 720B – Advanced Plant Breeding Tools
Spring 2013 (2 Credits)

INSTRUCTOR

Dr. Scott Haley
C-136 Plant Science, 491-6483
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appointments by arrangement

MEETING TIME AND PLACE

M, W, F, 11:00-11:50 AM – W212 Plant Science
Course will meet 3 times per week for 10 weeks

COURSE PREREQUISITES

Plant Breeding (SOCCR460, or equivalent); three credits in statistics.

TEXTBOOK

There is no required textbook for this course. Several reference sources will be made available via RAMCT Blackboard.

LEARNING OBJECTIVES

- The successful student will develop an appreciation of the basic strategies of plant breeding.
- The successful student will develop an understanding of field plot techniques and data analysis methods for field trials and genotype x environment (GxE) interaction in plant breeding programs.
- The successful student will develop an understanding of fundamental principles related to breeding for pest resistance, environmental stress tolerance, and end-use quality.
- The successful student will develop an understanding of basic strategies pertaining to molecular breeding approaches useful in applied crop improvement programs.
- The successful student will use classical and current literature to foster improved understanding of plant improvement and disciplines contributing to plant improvement.

EVALUATION

- Each student will be required to give one presentation during the semester (50 points). Details on this activity will be provided.
- Each student will be required to lead one discussion session during the semester (20 points each). Details on this activity will be provided.
- One final exam will be given at the end of the semester (100 points). The final will be open-book and comprehensive and will consist of predominantly multiple choice, short answer questions, or problems.
- Four homework assignments will be given during the semester (25 points each).
- Final assignment of grades will be according to a 90% A, 80% B, 70% C, 60% D, and <60% F scale calculated as follows:

1 Presentation (50 pts) + 7 Questions (10 pts)	= 120 points
1 Discussion (20 pts) + 7 Questions (10 pts)	= 90 points
Final exam	= 100 points
4 Homework assignments (25 pts)	= 100 points

Total

= 410 points

Course Outline
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Week	Dates	Topic
1	Jan 28, 30, Feb 1	Plant Breeding Perspectives and Fundamentals
2	Feb 4, 6, 8	Field Plot Techniques
3*	Feb 11, 11, 15	Field Plot Techniques
4	Feb 18, 20, 22	Genotype x Environment (GxE) Interaction
5	Feb 25, 27, Mar 1	Genotype x Environment (GxE) Interaction
6	Mar 4, 6, 8	Breeding for Pest Resistance
7	Mar 11, 13, 15	Breeding for Environmental Stress Tolerance
8	Mar 25, 27, 29	Breeding for End-Use Quality
9	Apr 1, 3, 5	Molecular Breeding Tools
10	Apr 8, 10, 12	Molecular Breeding Tools

* Two sessions to be held on Feb 11 due to instructor absence on Feb 13.
First session will be 10:00-10:50 AM in Plant Science C021.
Second session will be 11:00-11:50 AM in Plant Science W212.