Course Syllabus
SOCR 720A – Advanced Plant Breeding Methods
Spring 2017 (2 Credits)

INSTRUCTOR

Dr. Scott Haley
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office hours by arrangement

MEETING TIME AND PLACE

11:00-11:50 AM – M, W, F
W-001 Plant Science Building
(until week 10, March 31)

COURSE PREREQUISITES

Introductory plant breeding (i.e., SOCR 460, or equivalent); three credits in statistics.

TEXTBOOK

There is no required textbook for this course. Reference materials will be made available via CSU's online educational platform – Canvas (http://canvas.colostate.edu).

LEARNING OBJECTIVES

- Students will develop an appreciation of some of the key historical achievements in plant breeding.
- Students will develop an understanding of genetic gain theory and strategies for optimizing genetic gain in plant breeding programs.
- Students will develop an understanding of breeding methods used in self-pollinated and cross-pollinated crop breeding programs.
- Students will use both classical and modern 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 a presentation (including leading discussion) of one research paper or topic during the semester (50 points). Students not presenting or leading discussion that day will be required to write a one-page review/critique (10 points each) of the paper/topic being presented and discussed. Details on these activities will be provided.
- Four 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 that will be calculated from the following activities:

Take home quizzes (2)	= 100 points
Final exam (1)	= 100 points
Student presentation (1)	= 50 points
Paper review/critique (8)	= 80 points
Homework assignments (4)	= 80 points
Total	= 410 points

Course Outline
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Week	Dates	Topic
1	Jan 16, 18, 20	Plant breeding perspectives
2	Jan 23, 25, 27 **	Plant reproduction, genetics introduction
3	Jan 30, Feb 1, 3	Qualitative (Mendelian) genetics
4	Feb 6, 8, 10	Quantitative genetics
5	Feb 13, 15, 17	Genetic gain, selection methods
6	Feb 20, 22, 24 **	Methods introduction, crossing strategies
7	Feb 27, Mar 1, 3	Self-pollinated cultivar methods
8	Mar 6, 8, 10	Hybrid cultivar methods
9	Mar 20, 22, 24 **	Open-pollinated, synthetic cultivar methods
10	Mar 27, 29, 31	Vegetatively propagated cultivar methods
11	Apr 3-7	Final exam

** Some rescheduling will be necessary due to instructor travel.

Academic Honesty and Integrity

The principles and practices of academic honesty and integrity will apply to all components of this course.

Academic Integrity – "The foundation of a university is truth and knowledge, each of which relies in a fundamental manner upon academic integrity and is diminished significantly by academic dishonesty. Academic integrity is conceptualized as doing and taking credit for one's own work. A pervasive attitude promoting academic integrity enhances the sense of community and adds value to the educational process. All within the University are responsible for and affected by the cooperative commitment to academic integrity." (from CSU Catalog)

This course will adhere to CU's Academic Integrity Policy as explained at:
https://resolutioncenter.colostate.edu/conduct-services/academic-integrity/
http://catalog.colostate.edu/general-catalog/policies/students-responsibilities/#academic-integrity
https://resolutioncenter.colostate.edu/conduct-code/

Plagiarism is "the practice of taking someone else's work or ideas and passing them off as one's own. … If it is important to use the actual words of another author, they should be put in quotation marks and be clearly referenced." (Day et al., 2012. Biosystems Engineering 111:1)

Some links to information on academic integrity and plagiarism are as follows:

Practicing Academic Integrity: http://learning.colostate.edu/integrity/index.cfm

Ways to Avoid Plagiarism: http://learning.colostate.edu/integrity/ways_to_avoid.cfm

Writing Guide – Understanding Plagiarism:
http://writing.colostate.edu/guides/researchsources/understandingplagiarism/index.cfm