

**Course :** Plant Genomics and Biotechnology

**Course Number:** WSU Hort 480/CSS480

**Instructor:** Rick Sharpe PhD, Vogel Plant Sciences 130, 509-335-6586 [rsharp@wsu.edu](mailto:rsharp@wsu.edu)

**Schedule:** TU,TH 16.15-17.30

Academic Calendar: <http://registrar.wsu.edu/academic-calendar/> - drop dates, fee dates etc.

**Course Description:**

**Catalog states:** "Advanced concepts in plant genomics and biotechnology with emphasis on approaches, techniques, and application."

**Prerequisites:** Biol 420 or equivalent, recommended preparation: MBIOS 301 or CROP SCI 444.

**Objectives and Course Philosophy**

The goal of Hort 480 Plant Genomics and Biotechnology is to develop an understanding of the genetics, genomics, and biotechnology of plants, and the ways in which this information can be utilized for crop improvement. This will be accomplished through a study of plant genomics and biotechnology, along with the investigation of current methods, approaches and techniques. The course will be comprised of class lectures, invited presentations, reading materials and assignments and class presentations and group discussions.

**Student Learning Objectives/Goals**

**Objective 1:** Understand central dogma, recombinant DNA, genetic diversity identification, methods to capture genome sequences

**Objective 2:** Establish gene-trait relationships via genetic and genomics approaches

**Objective 3:** Integrate the information from objective 1 and 2 in breeding and biotechnology approaches for efficient crop improvement

**Objective 4:** Become familiar with public perception issues regarding biotechnology and approaches for effective science communication.

**TEXTBOOK:** None required: supplemental information will be supplied in the classroom.

**Teaching Methods**

The course will be taught in an open lecture format, attendance will not be recorded, although attendance in class will be necessary for success. Mitigating circumstances preventing class attendance will be assessed on a case to case basis. The only reason you should have for not attending class is if the instructor cannot attend either! Occasional homework assignments may be required.

**Grading Policy and Requirements**

There will be 3 lecture examinations given during the semester. Each lecture exam will have approximately 70% emphasis on current information since the last test, and balance on information cumulatively assimilated throughout the course. Any information from lectures, reading, any assigned homework, or guest lectures may be used in exams. To demonstrate assimilation of technical material, questions involving recall, listing, short answer and definition will be used. To assess comprehension and understanding, discussion questions will be emphasized. The student is expected to organize ideas, thoughts, and factual information in order to present logical, comprehensible answers to discussion-type questions. Proper use of grammar, syntax, and spelling will influence your grade (i.e., NO IM-speak!). The final exam will be comprehensive, and hopefully demonstrate the student's ability to synthesize knowledge gained throughout the semester into logical solutions confronted in "real-world" situations.

### Other Course Requirements

Two (2) brief reviews of research articles in the general area of genomics and biotechnology are required. These reviews should be no more than two typewritten pages. For further information consult the instructor.

A library research term paper can be used to bolster the student's final grade. Topics of mutual interest to the instructor and student are to be agreed upon by a mid-semester date to be announced in class.

All written material is due at the close of business on the dates shown on the assignment. Assignments and exams will be submitted via Blackboard and due on the dates indicated. Proper writing and communication skills are essential, lack of such will affect your grade. Late submissions will receive a 5% penalty for each day past due.

Regarding assignment due dates: In light of increasing instructor sensitivity to the human condition, each student will receive ONE "get out of jail free" card, which will be distributed when enrollment figures become finalized. **This card is to be used whenever the student needs to submit a late assignment no questions asked.** The card is not transferable, or **redeemable for an exam** and redeemable if not used prior to the final exam for five (5) extra points added to the student's final average. It is conceivable that the student could significantly bolster the final grade in this fashion.

Grading weight of each portion of the course:

	Percentage	Point Totals
Exams (2 ea)	40%	200
Paper review assignment (2ea)	20%	100
Final Exam	25%	125
Discussion Questions	15%	75
Total	100%	500
Extra credit – library research paper	10%	50

Grading will be based upon a percentage basis:

A 94-100	B+ 87-89	C+ 77-79	D+ 67-69	F < 60
A- 90-93	B 84-86	C 74-76	D 60-66	
	B- 80-83	C- 70-73		

**Disability Statement:**

“Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Disability Resource Center (DRC-<http://www.drc.wsu.edu>). All accommodations MUST be approved through the DRC (Washington Building, Room 217). Please stop by or call 509-335-3417.

**Safety Policy:**

Washington State University is committed to maintaining a safe environment for its faculty, staff, and students. Safety is the responsibility of every member of the campus community and individuals should know the appropriate actions to take when an emergency arises.

Please, go to:

WSU Pullman Campus Safety Plan at: <http://safetyplan.wsu.edu>

WSU Emergency Management web site: <http://oem.wsu.edu/emergencies>

**Plagiarism policy:** “Don’t Cheat, or it will cost you!” Seriously, Plagiarism is a form of cheating, which involves knowingly passing of the writing work of others as your own. If you would like a more in-depth definition of plagiarism, please consult the following web site: <http://libraries.wsu.edu/library-instruction/plagiarism>. All plagiarism is cheating but not all cheating is plagiarism. Cheating (using text-messaging or crib notes for test answers, etc.) is also prohibited. Students caught cheating will fail the test in question and will be reported to the Office of Student Affairs. Any student who violates the University's standard of conduct relating to academic integrity will be referred to the Office of Student Conduct and may fail the assignment or the course. You can learn more about Academic Integrity on your campus using the URL listed in the Academic Regulations section or at <http://conduct.wsu.edu/academic-integrity-policies-and-resources>. Please use these resources to ensure that you don’t inadvertently violate WSU's standard of conduct.