



PLSC 553: Introduction to Plant Breeding (3 credit hours)
Course Information & Syllabus
Fall 2020

Lecture Time: Tuesday and Thursday 9:50 to 11:05 am

Location: Brehm 142

Contact Information:

Instructor: Dr. Vince Pantalone, Professor, Plant Sciences Department

Office: 254 Plant Biotechnology Building

Phone: 865-974-8801

E-mail: vpantalo@utk.edu

Office Hours: By appointment

Teaching Assistant: Chris Wyman (email: cwyman@vols.utk.edu)

Course Description

Introduction to general principles, practices, and techniques used to breed plants, select traits, and develop crop cultivars: including biomass feedstock crops. Concepts discussed will range from quantitative and population genetics, historical through conventional plant breeding (through self- and cross-pollinations) and hybridization, then end with exploration of contemporary approaches to improve plant traits including molecular breeding and genetic engineering.

Credit restriction: Students may not receive credit for both 453 and 553.

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

1. Describe sources of genetic variation in plants.
2. Understand plant's reproductive systems and select appropriate selection methods.
3. Describe changes in population structures in self and cross pollinated crops.
4. Describe different approaches of plant selection to improve genetic potential.
5. Apply advanced tools to expedite cultivar improvement.

Reference Textbooks (optional, also available from course reserves at the Pendergrass Library):

Brown J. and Caligari P. 2014. An Introduction to Plant Breeding (2nd Ed). Blackwell Publishing

Allard R.W. 1999. Principles of Plant Breeding. John Wiley and Sons.

Acquaah G. 2012. Principles of Plant Genetics and Breeding. Wiley – Blackwell.

Note: You can access the 2007 version of Acquaah

here: http://eprints.stiperdharmawacana.ac.id/105/1/%5BGeorge_Acquaah%5D_Principles_of_Plant_Genetics_and_%28BookFi%29.pdf

Technology Use in the Course:

PLSC 453 will utilize Canvas System via Online@UT. Find information about Canvas at <http://online.utk.edu>; where you are prompted to login to Online@UT. As a student registered for this course, you are automatically loaded into the course Canvas site. Course related announcements, handouts, readings, and lectures will be posted on Canvas.

Readings:

Supplemental reading assignments are optional, and will not be given for each lecture. Reading assignments for selected lectures will be announced in class or posted on Canvas.

Examinations:

Students will be evaluated on their progress through **three examinations; (2) during the semester and one (1) 120-minute final examination**. All examinations will count toward the final grade.

Quizzes/participation:

There will be announced quizzes periodically throughout the semester. The best of 5 quizzes will count toward the grade. There will be regular assignments and class-activities for participation points throughout the semester.

Graduate Student Project:

Each student will work on one or a few additional projects. A semester project will require an oral presentation by the student on the last day of classes.

University Diversity Statement:

Diversity enriches the educational experience by providing students with the opportunity to learn from individuals who differ from themselves. Diversity strengthens communities and the workplace by preparing students for citizenship in an increasingly complex, pluralistic society, and by fostering mutual respect and teamwork.

Class Policies:

Face masks are required in class. Attendance is very important during the lectures, although it is not mandatory. Students will be responsible for all classes missed. Cell phones are not to be used during class. Laptop computers may be used in class for note taking or other class-related activities only (i.e., no e-mailing, chatting, checking facebook, etc.).

Grading Policy:

Two 75-min exams	300 points
Quizzes.....	100 points
Homework.....	100 points
Discussion Participation.....	200 points
Final exam	200 points
Graduate Project(s).....	100 points
Total class points for graduate grade determination	1000 points

Letter Grade	Performance Level	Quality points credit hour	Percentage (%)	Course Points Earned
A	Superior	4.00	90 - 100	900 - 1000
B+	Very Good	3.50	85 - 89	850 - 899
B	Good	3.00	80 - 84	800 - 849
C+	Fair	2.50	75 - 79	750 - 799
C	Poor	2.00	70 - 74	700 - 749
D	Unsatisfactory	1.00	60 - 69	600 - 679
F	Fail	0.00	≤ 59	< 600
I	Incomplete	No assessment		

For further information on grading scales, see the 2013-2014 Graduate Catalog.

***Course syllabus is subject to change by instructor at any time. Students will be given notice of any changes.