The University of Tennessee
College of Agricultural Sciences and Natural sources

PLSC 453: 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. 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.

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

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

Allard R.W. 1999. Principles of Plant Breeding John Wiley and Sons, Inc. (2nd Ed)

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

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 identify appropriate selection approach.
3. Describe changes in population structures due to selection in self and cross pollinated crops.
4. Describe different approaches of selection to improve plant genetic potential.

5. Understand roles of advanced tools in expedited cultivar improvement.

Technology Use in the Course:

PLSC 453 will utilize Canvas 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 on Canvas site and it should appear on your homepage. 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) final examination online**. 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.

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

Total class points for undergraduate grade determination .....900 points

Letter Grade	**Performance Level**	**Quality points credit hour**	**Percentage (%)**	**Course Points Earned**
A	Superior	4.00	95 - 100	855 – 900
A -	V. Good to Superior	3.70	90 - 94	810 – 854
B+	Very Good	3.30	87 – 89	783 – 809
B	Good	3.00	84 - 86	756 – 782
B -	Fair to Good	2.70	80 – 83	720 - 755
C+	Fair	2.30	77 - 79	693 – 719
C	Satisfactory	2.00	74 - 76	666 – 692
C -	Unsatisfactory	1.70	70 – 73	630 – 665
D +	Unsatisfactory	1.30	67 - 69	603 – 629
D	Unsatisfactory	1.00	64 - 66	576 – 602
D -	Unsatisfactory	0.70	60 - 63	540- 575
F	Failure	0.00	≤ 59	<539

For further information on grading scales, see the Undergraduate Catalog.

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