PS511: Seed Biology and Physiology (1 credit)

Instructor: Feng Chen
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Office hours: drop by or schedule an appointment

Course description:
Introduction of seed as a biological system: its formation, dormancy, germination and viability. Discuss on how these processes are regulated by internal physiology and environmental conditions. In-depth learning of specific topics about seeds through student-led lectures. Application of knowledge about seeds to problem solving by crafting research proposals.

Time and location:
Class meets Monday 11:15AM- 12:05PM in room 128, Ellington Plant Science Bldg.

Textbook:
No textbook is required for this course. "Seeds: Physiology of Development and Germination" by Bewley and Black, second edition, is recommended as a general seed biology textbook.

University's honor statement:
"An essential feature of the University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity."

Evaluation and grades:
Each student will be graded based on this ratio: 30% lecture presentation, 10% class participation, and 60% grant writing. The lectures will be assessed by criteria including clarity, scientific accuracy, evoking discussions, and overall quality of presentation. Class participation includes both class attending and involvement in active class discussions. The grant proposal, which is required to focus on a topic related to seeds, will be evaluated based on the significance of the identified problem, clarity, rational and soundness of the proposed experiments.

Grading (%)	≥ 93 = A	90-92 = A-
	87-89 = B+	83-86 = B
	80-82 = B-	77-79 = C+
	73-76 = C	70-72 = C-
	67-69 = D+	63-66 = D
	60-62 = D-	< 60 = F

Lecture schedule for PS511 in Spring 2020

Date (Tues)	Topic
Jan. 13	Overview of the course: why a seed course? The topics and format
Jan. 20	MLK day
Jan. 27	Seed development I: flowering control and flower development
Feb. 3	Seed development II: pollination and double fertilization
Feb. 10	Seed development III: embryogenesis
Feb. 17	Seed dormancy I: types of dormancy
Feb. 24	Seed dormancy II: dormancy breaking
Mar. 2	Seed germination I: imbibition and germinative events
Mar. 9	Seed germination II: molecular mechanisms of seed germination
Mar. 16	Spring break
Mar. 23	Seed viability: longevity and deterioration mechanisms *(Instruction on grant proposal will be given in this class)*
Mar. 30	*Student presentation: Harmony Yomai, Devon Carroll*
Apr. 6	*Student presentation: Randall Landry, Trey Clark*
Apr. 13	*Student presentation: Mst Shamira Sultana, Jessica Layton*
Apr. 20	*Student presentation: Paolo Montano Tagologuin, Andrew Moore*
Apr. 27	*Student presentation: Rebekah Rogers, Tyler Newton*
Final week	Grant proposal due on April 30, 2020