PLHL/BIOL 4444. Spring 2013. Tuesday, Thursday 1:30-3:00pm; 206 Williams**.**

Instructor: Dr. M.A. Cohn, 493 Life Sciences (8-1464; mcohn@lsu.edu).

Seed Physiology Outline:

Class days	Topic
1/15/2013	Course Business; Why study seeds?
1/17/2013	The seed continuum/seed real estate
1/22/2013	Seed real estate
1/24/2013	Embryogenesis [class photos]
1/29/2013	Seed development
1/31/2013	**Quiz 1**; seed maturation
2/5/2013	Desiccation tolerant or not **[submit seed formation question]**
2/7/2013	Desiccation tolerant or not
2/12/2013	MARDI GRAS 2013 – NO CLASS
2/14/2013	Desiccation tolerant or not
2/19/2013	Desiccation tolerant or not **[submit desiccation tolerance question]**
2/21/2013	**Exam 1 (2013)**
2/26/2013	Germination
2/28/2013	Germination
3/5/2013	Germination
3/7/2013	Germination
3/12/2013	**Quiz 2 -** germination
3/14/2013	Dormancy **[submit germination question]**
3/19/2013	Dormancy
3/21/2013	Dormancy
3/26/2013	**EXAM 2 (2013)**
3/28/2013	Dormancy **[submit dormancy question]**
4/2/2013	SPRING BREAK 2013 – NO CLASS
4/4/2013	SPRING BREAK 2013 – NO CLASS
4/9/2013	Dormancy
4/11/2013	Dormancy
4/16/2013	Seed Ecology
4/18/2013	Seed Ecology
4/23/2013	**EXAM 3 (2013)**
4/25/2013	Seed vigor and viability
4/30/2013	Seed vigor and viability **[submit ecology/viability question]**
5/2/2013	Course summary & evaluation

4444 FINAL EXAM (2013): FRIDAY, May 10th, 7:30am to 9:30am

Final Exam Period (2013): Monday, May 6th through Saturday, May 11th

What this course is about: Seeds! What they are and how they cope with life. You will need to learn the language of seed biology (definitions of terms) to describe and understand seed behavior (concepts). Because this is a living, growing science, there are things we know for sure, things that we think we know something about, and some things that are almost total mysteries. You will hear all about it as time permits.

THERE IS NO REQUIRED TEXT FOR THIS COURSE!! A new book is available, but I have not completely evaluated its worth. You can purchase it as a supplement to the lectures if you want to:

Bewley J.D., KJ Bradford, HWM Hilhorst, H Nonogaki (2013) *Seeds. Physiology of Development, Germination and Dormancy, 3rd edition.* Springer, New York.
ISBN (paperback): 978-1-4614-4692-7
ISBN: (eBook): 978-1-4614-4693-4; DOI 10.1007/978-1-4614-4693-4

WIKIPEDIA is surprising accurate on most of the fundamentals of seed science, and you can refer to this site for clarification of the lectures.

Class attendance and attention: The instructor strongly recommends (a euphemism for: 'BE THERE'!) that you attend all lectures because it will be the only source of 'testable' information for the class. Illustrations for the class will be available on Moodle. **Be sure to turn off your cell-phone during class time, and do not use your PC for activity unrelated to class. I ask students questions during class, and if your mind is elsewhere, you will not look smart!**

Quiz dates, exam dates, and research proposal deadlines: **These are firm dates.** Plan ahead and be prepared at the required times. Make-up exams will not be provided, except under extraordinary circumstances, and these will be more difficult.

What about my grade?

Each quiz is 25 points (2 x 25 = 50 points)
Each in-class exam is 100 points (3 x 100 = 300 points)
The **cumulative** (covers the whole course) final exam is 200 points

Additional assignment for graduate students: a research proposal (AFRI format) on the seed subject of your choice (with prior approval of Dr. Cohn)[150 points]

Exams and quizzes will contain multiple-choice, fill in the blanks, short answer, true/false, matching, diagram labeling, short essay and any other sort of question that may be appropriate to test your command of the subject matter.

Dr. Cohn's office location and hours [to talk about seed questions or careers in science]:

Office: 493 Life Sciences Building (Tel: 8-1464; email mcohn@lsu.edu)
Office hours: Tuesdays and Thursdays, 3:45pm-5:00pm or by appt. [Don't be shy, come by!]

No No's!: no cell phones; no cheating or plagiarism of any kind is permitted!!

Yes, Yes': Be on time for class; review your notes before and after the corresponding lecture; be prepared to speak well, think logically, and write coherently!

One of many issues is how to keep your focus when there are no textbooks to read. Most students have the strong tendency [remember, I was a student once!] to avoid review of their class notes until they need to cram for an exam. This results in panic (worst case), holding material in short term memory (best case), and then it's gone after the test (worst case).

Dr. Cohn STRONGLY SUGGESTS that you review your lecture notes soon after each class and then again right before the next lecture. In these reviews, you should note any gaps in your understanding and ask specific questions in the times allotted at the beginning of each lecture.

Dr. Cohn uses the 'Socratic' method in class, particularly when covering the experimental evolution of a topic. This means that Dr. Cohn will ask **YOU** questions in class, and he will expect a logical answer [not necessarily the correct one]. To respond intelligently, you will have to be actively listening and taking notes in class [aka paying attention]. You will fail to look smart if you are in the habit of checking your email, surfing the web, etc. on your computer, instead of engaging in class.

Science is about questions/experiments and so is the educational process. For 2013, we will have an added feature for BIOL/PLHL 4444.

NEW FOR 2013! PAY ATTENTION!
To encourage you to think about the scientific process, you will prepare **ONE QUESTION** on a 3" x 5" index card for each major topic area [as noted in the syllabus], indicating your name and date on the card. **This is required.** The nature of these questions should focus on your understanding of the material [not asking me to go over lecture material; no definitions etc]. I want you to try to think about mechanism, experimental implications etc. In other words, if you were a working scientist, what questions might be worth pursuing experimentally, what are you curious to know more about? Then I will review the questions and spend a portion

of class time addressing [not necessarily answering] the one or two most interesting questions. **YOU WILL BE REWARDED [OR PENALIZED FOR LACK OF] FOR YOUR EFFORTS.** However, I am not prepared to commit to the point value before the experiment begins. Clearly, you will be penalized if you fail to submit your question on time, or if you fail to submit a question. You will also be rewarded for the quality of each question [and this will be judged on a sliding scale].

So, welcome to the world of seeds; your life depends on them. As biology majors, you should know how they work. I have spent my professional life studying them, and still have more questions than answers.