Instructors:
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Office Hours:
B. Kunkel: Mondays 2:30 – 3:30 pm or by appointment; Office: Monsanto 319
J.P Park (TA): Wednesdays 2:00 – 3:00 pm or by appointment, 111 NSLC

Course description
This course will introduce students to the fundamentals of how plants grow, metabolize and respond to their environment. Topics to be covered will include the conversion of light energy into chemical energy through photosynthesis; source-sink relationships, long-distance transport of carbon and carbon storage; water uptake and transport; physiological responses to a changing environment and the roles of hormone signaling & physiology in regulating these responses, plant-specific metabolic pathways that include targets of herbicides, sources of chemicals for medicinal uses and potential biofuels. The course will consist of lectures and small group discussions of primary research articles.

Prerequisites: Bio 2970: Principles of Biology II, Chem 252: Organic Chemistry II; graduate standing, or permission of the instructors.

Course requirements, grading and absence policies
Students are expected to carefully read assigned readings, including text book chapters, review articles and primary research papers, before class and come prepared to critically discuss these readings. Student performance in the class will be determined as follows:

- Participation in literature discussions (15 %)
- Students will be required to write several short critiques (1-2 pages) evaluating original research articles discussed in class (20%)
- In-class quizzes (~ 5 over the course of the semester; (25%)
- Group presentation on Challenges in Plant Biology in the 21st Century at end of semester (15%)
- A final exam (25%)

If you are ill and need to miss a discussion session, you will be asked to turn in a written critique (1-2 pages) of that week’s assigned reading. On discussion dates when the entire class writes a critique of the paper, you will be asked to turn in an expanded critique (~4 pages) for the assigned reading.

Reading
We will rely mainly on primary literature and scientific review articles in this course. Links to the articles will be available on the course web site. Some readings will also come from an excellent textbook, "Plant Physiology", by Taiz and Zeiger, 6th Edition; Published by Sinauer Associates Inc. This is a highly recommended text book, especially for those of you who will continue to take courses or work in areas related to plant biology. A copy of the book will be on reserve in Olin library.
A suggested supplemental text, which students who are serious about plant biology (e.g. graduate students) should acquire is: Biochemistry and Molecular Biology of Plants, 2nd Ed. by Buchanan, Gruissem and Jones. A copy of this text will also be placed on reserve in the Biology library.

Course website: The website for the course is available on Blackboard (https://bb.wustl.edu).