




Charles E. Schmidt College of Science
Department of Biological Sciences
777 Glades Road
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TO: University Graduate Programs Committee (UGPC)
FROM: Rodney Murphey, Ph.D. 
Professor and Chair
Department of Biological Sciences
DATE: February 8th, 2016
RE: New Course Proposal Consent

To Whom It May Concern:

This note constitutes acknowledgement and consent of the Department of Biological Sciences for the creation of a new course within the department: **BOT 6506:Advanced Plant Physiology.**

Best Regards,

Rodney Murphey, Ph.D.
Chairman, Department of Biological Sciences
Director, Life Science Initiative on the MacArthur Campus

**BOT 6506 (2 CREDITS) ADVANCED
PLANT PHYSIOLOGY**

Summer, 2016

9:15 – 11:25 am, M, W, Sanson Science 178, Boca Raton

Department of Biological Sciences

Charles E. Schmidt College of Science, Florida Atlantic University

Instructor: Dr. Xing-Hai Zhang (pronounced like “shing-hi jong”), Associate Professor of Plant Molecular Biology, SC 262, Phone: 561-297-1011, e-mail: xhzhang@fau.edu

Office Hours: M, W, 3:30 to 5 pm, or by appointment. Office: SC 262/258.

Required Textbook: Introduction to Plant Physiology, William G. Hopkins and Norman P.A. Hüner, 4th edition (2009), John Wiley & Sons, Inc. **ISBN 978-0-470-24766-2**

Prerequisites: enrolled graduate students or instructor’s permission.

Course Description

This course is a study of plant life involving growth, development, reproduction (flowering), and interaction with the environment. As plant physiology is becoming an integrative science, this course will discuss the related principles in cellular biology, biochemistry, biophysics, molecular biology, evolution biology and ecology, and emphasize the shared knowledge and genetic mechanisms with other life forms (animals and microbes). The research tools, methodology, and biotechnology that are needed to study plant physiological and molecular functions will also be discussed.

Course Objectives

To help you gain basic knowledge of plant physiological and molecular functions

To introduce to you the current advance in plant molecular biology research.

To familiarize you with the current status and thought in plant biotechnology.

To cultivate your interests in pursuing advanced studies in plant biology.

Students are expected to study for a minimum of two hours for every hour of class time.

Students are expected to complete all assigned readings and homework.

Course Content (The schedule of topics to be discussed is subject to change during the semester, depending on the needs of the class.)

1. The Plant Cell (must read Ch 1)
2. Water, Fountain of Life (must read Ch 1)
3. Water Movement in Plants (must read Ch 2)
4. Nutrient Uptake (must read Ch 3)
5. Plant Nutrients (must read Ch 4)
6. Sun and Photoreceptors (must read Ch 5, 6)
7. Photosynthesis: Harvesting Sunlight (must read Ch 7)

8. Photosynthesis: CO₂ Assimilation (must read Ch 8, 15)
9. Photosynthesis: Where do photosynthetic products go? (must read Ch 9)
10. Respiration: Use of Photosynthesis Products, from Calvin to Krebs (must read Ch 10)
11. Nitrogen, a Constituent of Life (must read Ch 11, 12)
12. Environmental Stress (must read Ch 13, 14)
13. Growth and Development (must read Ch 16, 17)
14. Plant Hormones and Development (must read Ch 18 ~ 21)
15. Photomorphogenesis and Phototropism: Responding to Light (must read Ch 22, 23)
16. Gravitropism and Nastic Movement (must read Ch 23)
17. Plant Biological Clock and Photoperiod (must read Ch 24)
18. Temperature and Development (must read Ch 25, 26)
19. Secondary Metabolism - Plants, a Pharmaceutical Factory (must read Ch 27)
20. Biotechnology: Plants for the Future (in class discussion)

Course Procedure

Dr. Zhang presents lectures. In-class discussion, questions or requests for clarification at any time are encouraged.

Attendance Policy

I have high expectations of motivation and discipline from graduate students. I try to incorporate information from most recent research both in my lab and around the world into the lecture. Therefore, attendance of all classes and note writing are necessary to have a complete knowledge of this course, in addition to study of the textbook. Attendance is **MANDATORY**. Absence of any portion (more than 10 minutes) of the class without valid written documents will receive a penalty of 20 points per class. Please observe the relevant chapters of *FAU Graduate Catalog*. Your level of attention, attitude, and attendance will contribute significantly to your success and overall grade. Reasonable accommodation will also be made for students participating in a religious observance

Quizzes and Exams

There will be a total of three 30-minute quizzes throughout the semester, two of which will be recorded toward your final grade. A one-week notice in advance is given. There are no make-up quizzes and a score of zero is recorded for each missing quiz. This means that if you are absent for any reason (jury duty, personal reasons, car or traffic problems, etc) you use up your one freebie.

There will be two non-cumulative one-hour exams. However, the final exam may unavoidably, although minimally, overlap with the mid-term exam. Each exam consists of a variety of question types including multiple choice, short answer and short essay. There may be one or two “challenging” questions as extra credit (up to 20 points, at instructor’s discretion) for each exam. **THERE WILL BE NO MAKE-UP EXAMS!** If you have an approved written excuse for missing one exam, your course grade will be calculated on the basis of the remaining points.

There will be numerous unannounced 5-minute “pop quizzes” throughout the semester, most often at the beginning of the class. Students who are late or absent will lose these credits. In

Grade Reporting

Graded quizzes and exams will be returned to you as soon as possible or when appropriate. The final grades will be posted online. Instructors are not allowed to discuss grades over the telephone with anyone, please do not call to inquire about a grade.

Code of Academic Integrity

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001 at http://www.fau.edu/ctl/4.001_Code_of_Academic_Integrity.pdf. For this class, use of internet for learning is very helpful for your study and is strongly encouraged. However, using others' work without proper acknowledgement is wrong and may fall into the category of academic dishonesty. Misconduct during exams will be closely monitored and, once discovered, will be dealt with accordingly.

Classroom Etiquette

You are encouraged to actively participate in discussion and ask questions any time during the lectures. Coming late to class is disruptive and perhaps costly. I personally feel annoyed by late comers. I would appreciate your punctuality, and may show my gratitude in some tangible ways when necessary. All electronic devices must be turned off during class. Laptop computers are allowed under the condition that you do not bother others. Eating, drinking or any other disruptive behaviors are **NOT** allowed during the lecture.

Support Available

If you experience any difficulty in this course for any reason, please do not hesitate to consult with me or TA. We will try our best to help you succeed this course. Time management and effort are often the key factors to your success. Students who really want to learn rarely fail this course.

Students with Disabilities

In compliance with the Americans with Disabilities Act, students who require reasonable accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) — in Boca Raton, SU 133 (561-297-3880); in Davie, MOD 1 (954-236-1222); in Jupiter, SR 117 (561-799-8585); or at the Treasure Coast, CO 128 (772-873-3305) — and follow all OSD procedures.

addition, several take-home credit-bearing assignments may be required. These attendance-linked quizzes/assignments are worth of a total of 60 points.

In addition, a special topic essay may be provided as a take-home assignment required for completion of this course.

Incomplete Grades

Students should be aware that grades of Incomplete (“I”) are reserved for students who are passing a course but have not completed all the required work because of exceptional circumstances. A grade of “I” will only be given under certain conditions and in accordance with the academic policies and regulations put forward in *FAU Graduate Catalog*. The student must show exceptional circumstances why requirements cannot be met. A request for an incomplete grade has to be made in writing with supporting documentation, where appropriate.

Grading

Your final grade will be based on 600 points.

- Two quizzes: 140 points.
- Exam I: 150 points.
- Exam II: 150 points.
- Special topic essays: 100 points.
- Attendance-linked tests/assignments: 60 points.
- Attendance: subtraction applies.

Tentative schedule for Assessment

- xxxx, 2015 Quiz I
- xxxx, 2015 Exam I
- xxxx, 2015 Quiz II
- xxxx, 2015 Quiz III
- xxxx, 2015 Exam II

Assignment of Grades

Point Range	Percentage	Grade
553-600	93-100%	A
535-552	90-92%	A ⁻
517-534	87-89%	B ⁺
493-516	83-86%	B
475-492	80-82%	B ⁻
457-474	77-79%	C ⁺
433-456	73-76%	C
415-432	70-72%	C ⁻
397-414	67-69%	D ⁺
373-396	63-66%	D
355-372	60-62%	D ⁻
354 or less	59% or less	F

Dear Departmental Graduate/Undergraduate Program Committee,

I have asked Dr. Janet Blanks (The Center for Complex Systems), Dr. David Wolgin (Psychology), Dr. Marc Kantorow (College of Medicine) and Dr. Jerry Haky (Chemistry). I have got no response from Blanks. All others express **no objection** (see below) to my new courses “Advanced Plant Physiology” and “Advanced Plant Physiology Laboratory”.

Thank you for consideration.

Xing-Hai Zhang

Followings are their responses:

David Wolgin <wolgindl@fau.edu>

Wed, Oct 8, 2014 at 1:03 PM

To: Xing-hai Zhang <xhzhang@fau.edu>

The Dept. of Psychology has no objections to adopting these courses.

David L. Wolgin, Chair

Sent from my iPhone

Jerome Haky <hakyj@fau.edu>

Thu, Oct 9, 2014 at 11:36
AM

To: Xing-hai Zhang <xhzhang@fau.edu>

Dear Dr. Zhang,

The Department of Chemistry and Biochemistry has no objections to these courses.

Jerome E. Haky, Ph.D.
InterimChair
Department of Chemistry and Biochemistry
Florida Atlantic University
777 Glades Road
Boca Raton, FL 33431
[561-297-3338](tel:561-297-3338)



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Thursday, October 9th, 2014

To: Charles E. Schmidt College of Science
Biology Department

The Biomedical Science Department in the Charles E. Schmidt College of Medicine has reviewed the new Biology course proposals for BOT 6506 (2 CREDITS)- ADVANCED PLANT PHYSIOLOGY and BOT 6506L (2 CREDITS)- ADVANCED PLANT PHYSIOLOGY LABORATORY, and does not have any objections to the proposed courses. The courses do not contain any material that could constitute a conflict with our Biomedical Science Graduate program curriculum.

Sincerely,

A handwritten signature in black ink that reads 'Marc Kantorow'. The signature is written in a cursive, flowing style.

Marc Kantorow, Ph.D.
Professor and Director of Graduate Programs
Charles E. Schmidt College of Medicine
Florida Atlantic University
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561-297-2910