INTRODUCTION TO BOTANY
BOT 2010

Lecture Instructor – Professor Francis E. "Jack" Putz
Research Areas: Conservation Biology and Tropical Ecology
Office Hours: Tuesdays & Thursdays 10:30-11:30am (or by appointment)
Office: 3165 McCarty A
Telephone: 392-1486
Email: fep@botany.ufl.edu

Laboratory Instructors
Ana Eleuterio
Research Area: Tropical Ecology
Office Hours: TBA
Office: 3199 McCarty A
Telephone: 392-1281
Email: anaalice@ufl.edu

Erica Van Etten
Research Area: Tropical Conservation
Office Hours: TBA
Office: 511 Bartram
Telephone: 392-2159
Email: ericasaskia@yahoo.com

Lecture: Tuesdays & Thursdays; Period 3 (9:35-10:25am); G086 McCarty B

- While attendance will not be taken, the examinations will be based primarily on lecture material, as supplemented by assigned readings in the textbook and elsewhere. Furthermore, final grades include scores on several unannounced quizzes administered during lecture. In order to take full advantage of lectures, it is also recommended that you review the assigned readings/notes BEFORE class.

Laboratory (EVERYONE will attend **once** per week in 3170 McCarty A):

- Section 0607: Tuesdays, 4-5 periods (10:40 am-12:35 pm)
- Section 0608: Tuesdays, 8-9 periods (3:00-4:55 pm)
- Section 0609: Wednesdays, 4-5 periods (10:40 am-12:35 pm)

Course objectives: During this course, we hope you will gain an appreciation for plant diversity by learning how plants are essential for supporting life on our planet, how variation in form leads to differences in function, and the complex processes required for plant survival in ecosystems. We will explore several aspects of plant biology including their anatomy, physiology, life cycles, and ecology. **Please** take advantage of our office hours to discuss course materials, exams, or anything that sparks your interest in plants. Remember, these office hours are scheduled for your benefit!

Textbook: Graham, L.E., J.M. Graham, and L.W. Wilcox. 2005. *Plant Biology*, 2nd edition. Prentice Hall, NJ. (hopefully used copies will be available)
Laboratory Manual: Putz, F.E., K. Kitajima and A.M. Wagner. 2006. *Botany for Poets: A Laboratory Guide for Introductory Botany*
Available for @ $15.00 at the campus bookstore in the Reitz Union or University Copy Center, 1620 W. University Avenue.

Course Webpage: http://www.clas.ufl.edu/users/barbarac/BOT2010CourseGuide.htm

- Please visit this page (and the one listed below) for regular updates and helpful information.
- Lecture outlines can be downloaded (preferably *before* class) from our syllabus page at http://www.clas.ufl.edu/users/barbarac/BOT2010syllabus.html
- Please keep in mind that these notes are meant as a study aid and NOT as a substitute for class attendance. They are also subject to change during lectures, so regular class attendance is *strongly* recommended.

Calculation of Final Grades:

- *Lecture*: 60% (2 midterms, 30 points; several quizzes during lecture periods, 10 points; 1 final, 20 points)
    - Make-up exams will *only* be considered for medical or family emergencies and official academic activities. In all cases, written verification will be required. For scheduled academic activities, please contact me to make arrangements BEFORE the exam. STUDENTS are ultimately responsible for scheduling make-up exams with the instructor.
    - Exam questions will be based on lecture material, so regular class attendance is *strongly* encouraged.
- *Laboratory*: 40% (see "Laboratory grading and assignments")
    - Make-up quizzes and lab assignments will only be considered for reasons listed above and will require written verification. You will only have **two weeks after the missed lab period** to complete quizzes and/or assignments. Generally, a make-up quiz will be in the form of a 250 word essay, but the form of your makeup is ultimately up to your laboratory instructor.
- *Grading scale*: 100-90=A; 89-87=B+; 86-80=B; 79-77=C+; 76-70=C; 69-67=D+; 66-60=D; any score below 60 = E
    - **NB:** There will be NO extra credit given. Please do not wait until the end of the semester to seek an instant fix. As soon as you realize you're having trouble, come see me!

LECTURE TOPICS: BOT 2010 – Fall 2005

Date	Topic	Chapters
August 24	I Am Plant (This Means You)	1, 2
29	Molecules of Life	3
31	Molecules of Life, *continued*	3
September 5	Cell Structure: Prokaryotes & Eukaryotes	4, 18
7	Cell Structure: Prokaryotes & Eukaryotes, *continued*	4, 18
1	Metabolism: Photosynthesis	5
14	Metabolism: Respiration	5
19	DNA & RNA	6
21	Biotechnology	15
26	**MIDTERM 1**	**1-6, 15, 18**
28	Cell Division: Mitosis	7
October 3	Cell Division: Meiosis	13
5	Genetics & Inheritance	14
10	Evolution & Natural Selection	16
12	Taxonomy & Naming Organisms	17
17	Plant Structure, Growth, & Development	8, 12
19	Stems	9
24	Roots	10
26	Leaves	11
October 31	**MIDTERM 2**	**7-14, 16, 17**
November 2	Eukaryotic Diversity: Fungi & Protists	19, 20
7	Seedless Plants	21
9	Seedless Plants, *continued*	21
14	Gymnosperms	22
16	Angiosperms: Diversity & Reproduction	23
21	Angiosperms: Diversity & Reproduction, *continued*	23
23	Thanksgiving Holiday, **No Class**	
28	Plant-Animal Coevolution	24
30	Ecology & the Biosphere	25
December 5	Ecology & Sustainability	29
7	Optional question / answer session	
12	**FINAL EXAMINATION (12:30pm – 2:30pm)**	**19-25, 29**

LABORATORY SCHEDULE

DATE	TOPIC	POINT BREAKDOWN*
Aug 29-30	Cool & Useful Plants Introduction to Sustainability Project	A1 (5)
Sep 5-6	Cells & Chemistry	A2 (5), Q1 (5)
Sep 19-20	Photosynthesis, Respiration & Fermentation ***Take home GMO DVD for next week's lab***	A3 (5), Q2 (5) **Topic Due** (2)
Sep 26-27	Genetic Engineering	A4 (5), Q3 (5)
Oct 3-4	DNA, RNA, & Mitosis	A5 (5), Q4 (5) **Bibliography Due** (3)
Oct 10-11	Meiosis, Life Cycles & Genetics	A6 (5), Q5 (5)
Oct 17-18	Evolution	A7 (5), Q6 (5) **Outline Due** (5)
Oct 24-25	Stems & Roots	A8 (5), Q7 (5)
Oct 31-Nov 1	Leaves & Water Relations	A9 (5), Q8 (5)
Nov 7-8	Algae, Fungi & Lichens	A10 (5), Q9 (5) **Paper Due** (20)
Nov 14-15	Plant Diversity *** Sign up to practice presentation ***	A11 (5), Q10 (5)
Nov 28-29	Angiosperm reproduction: Flowers, Seeds & Fruits	A12 (5), Q11 (5)
Nov 22-24	Practice Presentations (by appointment)	**Practice Talk** (5)
Nov 28-29	Sustainability Presentations (time limit = 4 minutes + 2 minutes for questions)	**Final Presentation** (15)
Dec 5-6	CUMULATIVE PRACTICAL EXAM	(50)

*A = assignment, Q = quiz, (#) = number of points

Laboratory Grading and Assignments

Total points

Quizzes 5 points each 55

A quiz will be administered during the first five minutes of every lab period (N = 11). Questions will assess your understanding of the previous week's concepts and your preparation for the day's lab. See the "Course Guidelines" section for make-up policies.

Lab Assignments 5 points each 60

Each week (beginning the first week of labs) your TA will assign a lab exercise to be submitted for grading.

Discussion of Current Article in the Scientific Literature 5

Find a journal article pertinent to both botany and current affairs. The article can come from a variety of journals, many of which are web accessible through the UF Library System (e.g., Economic Botany, Frontiers in Ecology and the Environment, Trends in Ecology and Evolution, Conservation Biology, Conservation in Practice) as long as it is relevant. Write a short essay (250-350 words) explaining why you think this article is important and why it interests you. At the beginning of each lab (after the quiz, starting in the 3rd week of classes) 2 students will be called upon to make short (2-minute) presentations of their articles, during which they will convince the rest of the class of its relevance and general worth. There will be a sign-up sheet for presentation times at the first lab meeting.

Final Practical Exam 50

The practical will be held during your normal lab period and will be cumulative.

Sustainability Project 50

Just as your environment affects you in obvious and subtle ways, you have obvious and subtle impacts on your environment. This project is designed to give you an opportunity to explore some of your interrelationships with the natural environment. In the process, we hope you will develop more awareness of the consequences of human actions as well as about how environmental policies affect the world on which we depend. Ultimately we hope you will be motivated to get involved and take action as a responsible citizen of our small planet.

- **Submit topic (2 points)**

  Briefly describe the topic you wish to research. You may choose any issue that interests you, as long as it is related to sustainability. Suggestions:
  - Energy (fossil fuels, alternative energy sources)
  - Agriculture (organic or agribusiness)
  - Global warming
  - Biodiversity and ecosystem function
  - Eutrophication of aquatic systems
  - Forest management for timber
  - Bias in the media concerning environmental issues
  - Ecological footprints

- **Bibliography (3 points)**

In order to make informed decisions about an issue, you must be able to locate relevant information and evaluate its quality. Submit a list of sources you are consulting, and briefly describe the content of each source. You must list at least two books and two articles, as well as any websites.

- **Outline (5 points)**

Your outline should consist of a brief description of the problem, its causes and consequences, possible solutions, pros and cons of the solutions, and recommendations for ameliorating the problem.

- **Paper (20 points)**

Your paper may be written in any style, but must be clear and concise. All sources must be documented. Suggested length is 6-12 pages.

- **Practice presentation (5 points)**

Sign up for a time to rehearse your presentation with your TA (there will be a sign-up sheet available in lab). You may meet during your lab period OR during your T.A.'s office hours.

- **Presentation (15 points)**

You will have only four minutes for your presentation, and two minutes for questions. Be creative! Use whatever style or media will best attract and hold your audience's attention and communicate your message. A few suggestions: news report, billboard or poster, cartoon, animation or skit.

TOTAL LAB POINTS **220**

(These 220 points are worth 40% of your entire course grade.)