BOTANY LS1203 - PLANT BIOLOGY - SPRING 2004

An expanded version of this syllabus with links to additional information is available online at: http://faculty.weber.edu/sharley/1203/syllabus.html

**Prerequisites:** none
**Lecture:** MWF, 8:00-8:50
**Instructor:** Dr. S. Harley; **Office:** SL409M, 626-7434; **Office hours:** M-F 9:00-9:50 or by appointment

**Catalog Course Description**
An introductory course for non-majors that emphasizes the unique features of plant biology. Included are discussions on: the origins of life; important plants of the world and their habitats; plant diversity, structure, function, and reproduction; plants and environmental science; plants that changed history; practical botany; and botany as a science. Three lecture/demonstration hours per week.

**Students with disabilities**
Any student requiring accommodations or services due to a disability must contact Services for Students with Disabilities (SSD) in room 181 of the Student Services Center. SSD can arrange to provide course materials in alternative formats, if necessary.

**Student Behavior**
You are expected to comply with the Botany Department Statement of Expectations of Students. http://departments.weber.edu/botany/Handbook/expectations.htm

**Support materials**
There is no required textbook for this class. However, if you wish to purchase a general botany textbook, you may do so at the WSU bookstore or from various online bookstores.

The WSU bookstore stocks the following textbook for Botany SI2104 (a course for Botany majors/minors):

Two good textbooks written for non-majors Botany (like Botany LS1203) are:

The following general botany books are on reserve in the Stewart Library:

In addition to the books listed above, you might find The Online Biology Book authored by M. J. Farabee at Estrella Mountain Community College, in Avondale, Arizona, useful: http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookTOC.html
You can access course notes/overheads, reviews, and web links to relevant reading material and figures at http://faculty.weber.edu/sharley/1203/syllabus.html. You should check this site regularly for updates. There is also a course home page at http://faculty.weber.edu/sharley/1203/1203.htm which has links to the field trip web site, the syllabus, and other relevant sites.

**Course Topics (subject to change)**

1. Introduction  
   - What is a plant  
   - Why study plants  
   - Prokaryotic vs. eukaryotic cells  
   - Classification of organisms - part 1

2. Basic Chemistry and Important Biomolecules  
   - Basic chemistry  
   - Biomolecules: primary metabolites, secondary metabolites

3. Plant Cell Structure  
   - Membranes  
   - Subcellular structures  
   - Cell cycle (mitosis)

4. Plant Anatomy  
   - Cells and Tissues  
   - Root  
   - Stem  
   - Leaf

5. Energy Conversion Reactions  
   - Cellular Respiration  
   - Photosynthesis

6. Survey of the Traditional Plant Kingdom  
   - Classification of Organisms - part 2  
   - Prokaryotic Organisms  
   - Fungi  
   - Algae  
   - Lichens  
   - Life cycles (includes meiosis)  
   - Bryophytes  
     - Cryptobiotic Soil Crusts  
   - Seedless Vascular Plants  
   - Gymnosperms  
   - Angiosperms  
     - Vegetative Reproduction  
     - Sexual Reproduction: flowers and pollination (video)  
     - Fruits, seeds, and seed dispersal (video)
7. Mineral Nutrition and Related Information
   Soil
   Mineral Nutrition
   Carnivorous Plants (video)

8. Ecosystems and Biomes

9. Genetics
   Heredity
   Gene expression
   Genetic engineering

Grading
Your grade will be based on four exams and six written assignments that include summaries of five newspaper articles and a summary of an article from a scientific journal (or participation in the Antelope Island State Park Field Trip).

Exams
You will be given four exams. The first three will be worth 80 points each, and the fourth (given during finals week) will be worth 100 points. While the second, third, and fourth exams will not be formally cumulative, the later material in the course builds on earlier material. The format of the exams will be a mixture of multiple choice, matching, identification, short answer, and essay.
If you are so late for an exam that one has already been turned in, you may not take the exam. If you will be gone on official university travel, it is your responsibility to let me know at least one week before the exam so that you can take the exam early.
**NO MAKE UP EXAMS!!**

Written Assignments
All written assignments are due at the beginning of class on the due date. Late assignments will lose 5 points per calendar day. Any assignment that is more than three calendar days late will not be graded. **Any plagiarism in an assignment results in an automatic zero.** All assignments are to be typed (word processed), double spaced, with one inch margins and 12 point font. Do not use a cover page.
If you will be gone on official university travel, it is your responsibility to turn in assignments early. See the online syllabus for details on citing references, assignment formats, etc.

Newspaper Articles
In order to enhance your awareness of current botanical issues and develop an appreciation for the “plant perspective” of things, you will summarize five recent (published in 2003 or 2004) newspaper articles related to botany. For each article, you will write a one paragraph summary followed by one paragraph in which you explain what is important about the article from a plant perspective (what the article tells you about how plants grow, deal with stress, interact with other organisms, etc.). (Be aware that the second paragraph is difficult to write if you select an article related to economic botany.) If you use any references, be sure to cite them. You are to turn in a copy of the article with your summary. You may use an online newspaper, however, it must be the online version of a city’s daily newspaper (like The Salt Lake Tribune). You may also use articles from the AP or Reuters wire services. Each summary is worth 15 points.
Journal Article
You are to summarize an article from the scientific journal Economic Botany. (You cannot substitute any other journal. The Stewart Library has received this journal - call number SB1.E19 - since its inception in 1947. Surely there will be something since then that will interest you. An electronic version of the journal is also available via the Stewart Library web site: http://library.weber.edu.) If an article in Economic Botany is headed “Utilization Abstract,” “Notes on Economic Plants,” “Botanical Note,” “Collections Corner,” or "Book Review," it may not be used. (Basically, avoid any article that is three pages or less in length.) Your summary will include a one paragraph summary of the article. This paragraph will be followed by one paragraph in which you state the importance of the article as well as why you chose the article. The chosen article should be the primary reference. Additional references could include other periodical articles, web sites, and encyclopedias. If you use any references, be sure to cite them. A photocopy (or printout of the PDF file) of the chosen article is to be turned in with your summary. If a hard copy of the article does not accompany the summary, the summary will be docked 10 points. The summary is worth 30 points.

As an alternative to the journal article summary, you can go on the Antelope Island State Park Field Trip on April 23. If you go the field trip home page (http://faculty.weber.edu/sharley/AIFT/home.htm), you can access the field trip information. To use the field trip as a substitute for your journal article summary, you must go on the trip and turn in the answers to the field trip review questions by April 30.

Extra Credit: There is no extra credit in this class. (1) If you do not have time to master the content material and complete the assignments mentioned above, you certainly do not have time to do extra work. (2) It is not to fair to your classmates for you to have different criteria for your grade.

Calculation of your grade:

Three exams (3 @ 80 points each; 1 @ 100 points) 340 points
Five summaries of newspaper articles @ 15 points each 75 points
Summary of an Economic Botany article or the field trip 30 points
TOTAL 445 points

Point totals to achieve a specific grade are as follows:

A  = 413-445  B  = 369-386  C  = 324-341  D  = 280-297
A-  = 400-412  B-  = 356-368  C-  = 311-323  D-  = 267-279
B+ = 387-399  C+ = 342-355  D+ = 298-310  E  = 0-266
**Important Dates:**

January 19   Martin Luther King, Jr. Day - no classes
January 23   Summary of first newspaper article due
February 6   First Exam
February 13  Summary of second newspaper article due
February 27  Summary of third newspaper article due
March 3      Second Exam
March 12     Summary of fourth newspaper article due
March 15-19  Spring Break - no classes
April 2      Third Exam
April 9      Summary of fifth newspaper article due
April 21     Summary of *Economic Botany* paper due if you did not intend to go on the field trip and turn in the answers to the field trip review questions
April 23     Annual Botany Department Field Trip to the Antelope Island State Park. For more information, go to http://faculty.weber.edu/sharley/AIFT/home.htm
April 30     Answers to the field trip review questions due if you intend to substitute your participation on the field trip for the summary of the *Economic Botany* paper.
May 5        Fourth Exam, 7:00-9:00 am