

BZ450 – Plant Ecology – Topic Outline - Fall, 2005 – J. K. Detling

Week	Topic	Text
1. Aug. 22-27	Introduction and History of Plant Ecology	Chap. 1
2. Aug. 29-Sep. 2	Methods of Vegetation Sampling	TBA
3. Sep. 7-9	Light, Temperature, and Photosynthesis	Chap. 2
4. Sep. 12-16	Water: The Soil-Plant-Atmosphere Continuum	Chap. 3
5. Sep. 19-23	Soil as an Ecological Factor <i>Examination 1 – Sep. 23</i>	Chap. 4
6. Sep. 26-30	Evolution	Chaps. 5,6
7. Oct. 3-7	Plant Population Ecology	Chaps. 7,8,9
8. Oct. 10-14	Competition	Chap. 10
9. Oct. 17-21	Herbivory and other Species Interactions	Chap. 11
10. Oct. 24-28	Plant Community Ecology <i>Examination 2 – Oct. 28</i>	Chap. 12
11. Oct 31-Nov.4	Succession	Chaps. 13,14
12. Nov. 7-11	Biogeochemical Cycles	Chap. 15
13. Nov. 14-18	Landscape Ecology	Chaps. 16,17
14. Nov. 21-25	FALL RECESS – NO CLASS THIS WEEK ☺	
15. Nov. 28-Dec. 2	Global Change <i>Research Paper Due – Dec. 2</i>	Chaps. 20,22
16. Dec. 5-9	Vegetation of North America	Chap. 19
17. Dec. 16	FINAL EXAMINATION – 7:00 A.M. – 9:00 A.M. Friday	

BZ450 – Plant Ecological Research Assignment

Each student will conduct an ecological study of plants in the field or greenhouse. A field study would involve developing a hypothesis concerning changes in plant distribution and abundance along an environmental gradient you have observed in the field, and conducting measurements of vegetation and environmental factors to address this hypothesis. A greenhouse study would involve a manipulative experiment (including appropriate controls and experimental treatments) to address a question about how plants respond to variations in one or more environmental factors. Data on plant response to these variables would be collected periodically over the course of the semester.

For both types of studies, a final report worth 100 points will be due on Friday, Dec. 2. The report should follow the general format of the journal **Ecology** (see recent copies of the journal for style and format. You will be provided with a list of instructions to authors later in the semester). The report should include a separate **title page**, an **abstract**, **introduction**, **methods**, **results**, and **discussion** sections. Limit your papers to 12 pages of text plus any figures, tables, photos, and literature citations you include.

Please discuss your research plans with me and obtain approval for these plans prior to embarking on your study.

WARNING!! It takes time for plants to grow in the greenhouse, and snow or cold weather can prevent or reduce the enjoyment of field research. Therefore, get an early start on your study!

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Course Information

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Textbook: *The Ecology of Plants*, by Gurevitch, Scheiner, and Fox (2002)

Course objectives:

1. Provide an overview of the nature and scope of plant ecology, including the relationship of individual plants, plant populations, and plant communities to biotic and abiotic factors in their environment.
2. Introduce students to the primary literature in plant ecology, and provide experience in critically reviewing scientific literature.
3. Give students experience in designing field and greenhouse studies; collecting, analyzing, and interpreting data; and writing a scientific paper in proper scientific format.

Grading Policy: The course grade will be based on three (including final exam) written exams worth 100 points each, a written report on a field or laboratory project worth 100 points, and class participation (100 points) based on reviews and critiques of assigned primary literature articles. Therefore, there will be 500 points possible in the class. Cutoffs for grades of A, B, C, and D will be 90%, 80%, 70%, and 60% of the total points, respectively. The instructor reserves the right to lower these cutoffs, but they will not be raised. There will be no plus (+) and minus (-) grades.