Instructor: Dr. R. L. Thompson
Telephone: 985-3378
Offices: SC 212A and SC 202
Email: ralph_thompson@berea.edu

Meeting Time and Rooms: SC 212-Lab and Lecture

Course Description:

BIO. 344, DENDROLOGY AND FOREST ECOLOGY. Identification, classification, ecology, and economic uses of the native and naturalized woody plants and autumn flora of eastern Kentucky with special reference on the vegetation of the Eastern Deciduous Forest Region. A junior-senior-level course. Six hours of class, laboratory, and field work each week. Prerequisite: MAT 012, BIO 114. [One Course]

Texts:

Biology 344 book and handout packets are available at cost in the College Bookstore. [Required]


Course Objectives:

Course activities, experiences, and assignments in BIO 344 are designed to provide opportunities for students to accomplish the following cognitive, affective, and psychomotor objectives:

1) identify woody plants in field and lab from various plant communities in eastern Kentucky.
2) comprehend woody plant taxonomical and morphological terminology.
3) collect and prepare a woody plant reference collection for study purposes as a class team.
4) understand plant community concepts and apply ecological terminology to forest ecology.
5) use procedures and skills through recording, observing, and interpreting sampling data.
6) write a scientific literature review and give a 7-10 minute oral class presentation.
7) develop an awareness of native and exotic woody plants and their role in forest plant communities.

Grading and Evaluation Policy:

Final course grade will be determined on total points earned then converted to a final percentage from all lecture exams, lab exams, and field quizzes. The grade scale is: A =93-100%, A- =90-92%, B+ =88-89%, B =83-87%, B- =80-82%, C+ =78-79%, C =83-87%, C- =70-72%, D+ =68-69%, D =63-67%, D- =60-62%, and F =below 60%. Total points will be variable because of tentative lecture, lab, field exams/quizzes, and report. Total points for fall 2002 were approximately 1300. The instructor will retain all major exams after discussions and class corrections.

Dendrology: Lecture/Discussion Topics:

1. Introduction and Handouts.
2. Identification.
3. Classification and Handouts.
5. Vegetative and Reproductive Morphology and Handouts.
6. Pinophyta (Gymnosperms).
7 Magnoliophyta (Angiosperms).
8 Herbarium Use, Specimen Documentation, and Woody Plant Collections.

Forest Ecology: Lecture Topics: [Indoors when weather is not conducive to field work].

1 Life-History Patterns, Species in Environmental Complex, History of Ecology.
2 Species Interactions (Commensalism, Protocooperation, Mutualism, Herbivory, Amensalism).
3 Community Concepts; Plot and Plotless Sampling Methods and Exercises.
4 Plant Succession; Types of Succession.
5 Environmental Factors (Light, Temperature, Fire, Soil, Water, Photosynthesis)
6 Major Vegetation Types of North American (emphasis upon Eastern Deciduous Forest Region).

Field/Laboratory Work:

The field/laboratory exercises will be subject to the variables of weather conditions, transportation, and time schedule. In any event, lab and field activities are required of all students. Field/Lab quizzes and exam will be given during nearly all field trips. Because of the large class and field sites, these quizzes cannot be made up. Therefore, a missed exam/quiz will be reflected in the final overall point total and the final course grade. Field trips may include:

1 Berea College Campus, Forest, and Watersheds, Madison, Jackson, and Rockcastle Counties.
2 Eastern Kentucky University Campus and Richmond Cemetery, Richmond, Madison County.
3 Fort Boonesborough State Park, Kentucky River Palisades and Shoreline, Madison County.
4 E.C. Million Memorial Park, Richmond, Madison County.
5 Daniel Boone National Forest, Berea Ranger District, Madison County.
6 Whitehall State Shrine, Madison County.
7 John B. Stephenson Memorial Forest State Nature Preserve, Anglin Falls, Rockcastle County.
8 Trace Branch Surface-Mined Area and Rockcastle River Terraces, Rockcastle County.
9 Raven Run Nature Sanctuary, Fayette County.
10 Abandoned Limestone Quarries, Clark and Rockcastle Counties.

Class Time, Attendance, and Conduct Policies:

BIO 344 will meet promptly at 3:00 on MWF and terminate at approximately 5:00 unless otherwise stated in advance. Some field trips may be longer as arranged in advance. Students are expected to be punctual to all events. Field quizzes and field trips will not be made up regardless of excuses. Students are expected to dress according to the weather and physical elements in all cases, i.e., long pants or jeans (no shorts), shirts, coats or sweaters, comfortable boots or shoes (no sandals). Bring your own pens/ pens, notebook, relevant books, and field quiz sheets that are provided in lab. Appropriate classroom/ lab/field behavior must be observed. Walkman radio devices, cell telephones, tobacco or gum chewing, and smoking are not allowed at any time during this course. Keep pace with the instructor and keep incidental talking to a minimum. Use good common sense and safety procedures at all times.

Rationale:

BIO 344 fulfills an offering of the fall aspect of woody and herbaceous flora and vegetation that is comparable to Dendrology courses currently taught at Georgetown College, Northern Kentucky University, Eastern Kentucky University, and University of Kentucky.