

Ecology of the Southern Appalachians
A Field Course for Undergraduates
ABIO 571

DESCRIPTION: This course is a classroom/field oriented course designed to introduce participants to the ecology of the Southern Appalachian mountain system. Emphasis will be on selected vegetational communities within the Smoky Mountain National Park. The course will consist of nine, 3-hour classroom meetings and a one week field trip to the Smoky Mountain National Park.

CREDIT: Three semester hours of undergraduate credit.

INSTRUCTOR(S): Dr. Jeff Priest, Prof. Biology, Head, School of Education.

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CLASS LOCATION: Room 117, Ruth Patrick Science Education Center

DATES: Tuesdays, March 5 - May 7 (Classroom Activities)
Field Trip: Wednesday, May 15 - Wednesday, May 22

TIMES: 5:00 p.m. - 8:00 p.m.

TEXT: Selected Readings:

Vegetation of the Great Smoky Mountains, Eco.
Mono., Vol 26, No. 1, Jan. 1956

Smith, Richard M., 1998. *Wildflowers of the Southern Mountains*,
University of Tennessee Press, Knoxville, 262 pp

<http://rpsec.usca.sc.edu/RPSEC/Utilities/Pictures/smoky/main.html>

COURSE FEES: \$200.00 (includes transportation, meals and
campground fees for the week in the Smokies)

SUGGESTED GEAR: Sleeping Bag (tents will be provided), Flashlight, Toiletries,
Quarters, dimes and nickels for showers, hiking shoes, backpack, canteen, rain poncho,
binoculars, camera, bathing suit, towels, sweatshirt and/or medium weight jacket that
fits in backpack, hat, toilet paper (biodegradable preferred)

COURSE TOPICS:

- Geologic formation of the Southern Appalachians
- Glaciation and the evolution of the vegetational communities of
the Smoky Mountains
- Whitaker's classification system

- Abiotic factors that affect the plant and animal communities of the Southern Appalachians
- Plant morphology
- Plant taxonomy
- Exotic species and their effects on native species
- Use of map and compass

OBJECTIVES: By the end of this course participants will be able to:

1. describe the various peneplainations and orogenies that formed the Southern Appalachian Mountain system
2. describe the geology of the Smoky Mountains
3. describe how glaciation affected the present day plant communities seen in the Southern Appalachians
4. describe Whitaker's system for classifying vegetational types in the Smoky Mountains
5. describe the fallacies in Whitaker's system
6. describe how abiotic factors affect the vegetational communities within the Smokies
7. use a compass and map
8. describe how exotic species have affected the this mountain system
9. identify the plants that dominate the vegetational communities of the Smoky Mountains.

COURSE REQUIREMENTS:

1. **Attendance and participation (20%)** - to receive credit participants may only miss 1 class, no matter if the absence is excused or not excuses. A missed class will cause the final point total to be reduced. Participation will be subjectively assessed.
2. **Quizzes (30%)** - there will be 5 quizzes (at least 3 of which will be during the field trip). Quizzes will be on plant and community identification.
3. **Final Exam (20%)** - the final exam will test the participants knowledge of topics covered in the classroom.
4. **Field notebook (30%)** - participants will be required to keep a field notebook, recording observations and activities while on the field trip.

Field Notebook Criteria

It is suggested that the field notebook be a laboratory notebook with carbon copy pages. The entire notebook can be turned in and I will keep a copy of the carbon pages for my file.

The following sections are to be included in your field notebook:

1. Daily Log - in this section you should include the date, times and activities performed during that day.
2. Trail Log - in this section you should include

- a. date, name of trail/location, weather conditions.
 - b. description of trail/location (types of communities, plants, slope exposures, canopy types, etc.)
 - c. plant species list - common and scientific names
 - d. animal species list - common and scientific names
3. Complaint Section - in this section you are to write down all the complaints you have while on the field trip. Try to do this every day so that you don't forget something.

COURSE OUTLINE:

Tuesday, March 5 - course introduction, geologic history of the Southern Appalachians use of map and compass

Tuesday, March 19 - Vegetational history of the Smoky Mtns.

Tuesday, March 26 - Vegetation communities of the Smoky Mtns. Whitaker's classification system

Tuesday, April 2 - Vegetation communities cont., plant taxonomy, plant morphology

Tuesday, April 9 - Plant taxonomy, plant morphology

Tuesday, April 16 - Plant taxonomy, plant morphology

Tuesday, April 23 - Plant taxonomy, plant morphology, Exotic species (biological pollution)

Tuesday, April 30 - Plant Taxonomy

Tuesday, May 7 - Final Exam

Wednesday, May 15-Wednesday, May 22 - Field Trip, Smoky Mountain National Park (Greenbriar Island Campground, Route 3, Box 572 Gatlinburg, TN 37738 (615) 436-4243

Wednesday, May 15 - leave USCA campus at 7:00 a.m.

Thursday, May 16 - Andrews Bald Trail (grass bald community)(4 miles)

Friday, May 17 - Ramsy Cascade (Cove Hardwood Forest) (8 miles)

Saturday, May 18 - Bull Head - Rainbow Falls (cove, pine/heath, chestnut/oak) (7 - 13 miles)

Sunday, May 19 - free day

Monday, May 20 - Mt. Le Conte (Northern Hardwood Forest, Spruce-fir community, heath slicks) (13 miles)

Tuesday, May 21 - Cades Cove (human/animal relationships)(Abrams Falls-5 miles)

Wednesday, May 22 - Leave for USCA

FIELD NOTEBOOKS DUE, Friday, May 31

If you have a physical, psychological, and/or learning disability which might affect your performance in this class, please contact the Office of Disability Services, 126A B&E, (803) 641-3609, as soon as possible. The Disability Services Office will determine appropriate accommodations based on medical documentation.