SYLLABUS
Field Studies in Ecology at Black Rock Forest  SCIED-GE 2052
Graduate course for Spring 2016  One pre-trip class at NYU. PLUS TRIP:  7 day trip: May 21-27, 2016
(this course will start in the spring but the trip will take place during summer session 1)
Steinhardt School of Education  3 credits
Dr. Terryanne Maenza-Gmelch  tm15@nyu.edu

Summary: Field ecology at Black Rock Forest is a concentrated spring graduate field course in ecology & biology that takes place for one week at the forest. There is one pre-trip class at NYU. Students will live at the forest lodge. There is a room and board fee. See the lodge at:  http://www.blackrockforest.org/docs/teacher

Students become familiar with the flora & fauna of the Hudson Highlands region of New York as they study the major natural habitats within the forest. Data collection, data analysis and communicating the results in the format of a scientific paper and a scientific poster are among the practical skills developed. Field work has included quantification of plant communities, characterization of shrub communities using diagnostic keys, survey of birds/insects/amphibians/aquatic invertebrates & paleoecological analysis of sediment cores. Readings from Science, Nature, Ecology & other literature are carefully coordinated with our field studies.

Course objectives: Students will gain a strong practical experience in field botany and ecology featuring familiarity with the local flora and fauna, methods for sampling natural communities, reading and writing scientific papers, and enhanced understanding of complex ecosystems. Their experience will also provide a physical framework within which they will conduct their future teaching and conservation activities.

At NYU:

Class 1:  pre trip class at NYU: Course plan (journaling, reading, studying), equipment/supplies, travel arrangements (train/cars*), book-keeping.  Lecture: Grinnell Method: field notes, field journals; plant/bird/insect id.
(These will be on quiz on this on Saturday, the first day at Black Rock Forest.) * Students either take the train from NYC to Harriman, NY or drive their own cars.

At Black Rock Forest:

SAT  Distribute equipment and maps; how to use binoculars; forest safety and rules.  Quiz 1
Lecture: Distribution of biomes and link to climate; eastern deciduous forest subregions; Hudson Highlands vegetation, climate, soils, and geology. “Birding by Ear” (Audio).
Laboratory: Forest edge (Reservoir Road).

SUN  Laboratory: Shrub thicket (Jim’s Pond). (Meet at Science Center at 0845; return from field at 1400.)
Lecture: Basic morphological traits used in plant identification. Classification of plants. Five plant families well represented in BRF.  Quiz 2

MON  Laboratory: Ridge (Black Rock summit). (Meet at Science Center at 0845; return from field at 1400.)
Bird Point-count and Vegetation transect (Data collection for final report). Set out turtle nets.
Lecture: Population and Community ecology; community sampling methods.  Quiz 3

TUES  Laboratory: Ecological succession at the Burned Sites (Mt. Rascal). (Meet at Science Center at 0845; return from field at 1400.) Coring a FEN (south of Sutherland Pond). Retrieve turtle nets.
Lecture: Functional anatomy of trees; major forest processes. Bark.  Quiz 4

WED  Laboratory: meet at 1 pm; collection of forest floor samples for seed etc analysis
Evening Laboratory: owls et al. (8 pm)

THURS  Laboratory: Storm King Art Center (Meet at Science Center at 10:00 am).
Lecture: Biodiversity and forest ecosystem services. Anthropogenic and biotic impacts on forests.  Quiz 6
Forest Ecology Jeopardy

FRI  Bird Migration, Paper presentation and Final Exam

Grading policy:  (1)  Final practical exam: identification of specimens. 25 %.
(2)  Quizzes. 30 %.
(3)  Field journals will be graded. 30 %.
(4)  Tree, bird and turtle paper. 15 %.

Suggested Texts:  Newcomb’s Wildflower Guide (L. Newcomb),
Peterson Guide to Trees and Shrubs (G. Petrides),
Eastern Birds (RT Peterson)

There are no textbooks, however, any eastern tree/wildflower guide and any eastern bird guide would be useful, your choice. I will have a few copies at the forest to share.