11:704:274 *Field Techniques in Ecology and Natural Resources*
Fridays – 8:45-9:45 AM
Field Course - May 14-26, 2023

Course Objectives:
Students are immersed in two different ecosystems – the Kitattiny Ridge and Valley and the NJ Pinelands – to learn fundamental aspects of forestry, field ecology, wildlife biology, field data collection, and natural resource management.

Instructor:
Prof. Rick Lathrop lathrop@crssa.rutgers.edu 908 229 1779 Rm 129 ENRS
Henry John-Alder
Week 1: LG 4H Camp in Stokes State Forest.
Week 2: RU Pinelands Field Station.

Readings: *Plant Communities of New Jersey,* Robichaud and Anderson
Trees of New Jersey and the Mid-Atlantic States
Shrubs and Vines of NJ and the Mid-Atlantic States
Selected articles

During the Spring semester, classes will revolve around the basics of data collection, tree and vegetation sampling techniques and faunal survey techniques. During the field trip, activities will revolve around group hikes/field trips and group projects. The projects will entail the students investigating an ecological question that is backed up by independent field observation or measurement, a short report write-up and presentation. The report write-up should include the sampling protocol, a record of the data collected, a discussion with tables/graphics summarizing the results and a written synthesis of the findings. The students will be required to keep a journal that records class/field notes, readings, and sketches/photos and a species list (both common & latin names). The journal will be handed at the end of the course.

Grading will be based:

- 25 pts	Assignments 1-5 (5 pts each)
- 25 pts	Red Pine Stand Inventory
- 25 pts	Natural Forest Stand Inventory Problem write-up
- 25 pts	Landscape Gradient Sampling Problem write-up
- 100 pts	Pinelands
200 pts	Total

Food: Each student will be volunteered/assigned to a cooking group. Each Cooking group will shop for & prepare one evening meal for the entire group. We will shop for food on the 2 Sunday nights prior to that week's field trip. The instructor will collect $75 in cash ($150 total) from each student (at the beginning of each week) to pay for that week's food. A range of dietary preferences will be accommodated.

Schedule of Spring Semester Classes

Jan 20 **Introduction to Course**

Jan 27 RGL: 1: **Prescribed Burn: Pre-burn Monitoring**

Meet at EcoPreserve: Parking Lot 101 8:30am

Feb 3 RGL: 2: **Intro to Google Earth for Landscape Mapping**

Assignment 1 Due

Feb 10 RGL: 3: **Using the Web Soil Survey for Terrain/Soils Mapping**

Assignment 2 Due

Feb 17 RGL: 4: **Web Mapping tools for Conservation Planning**

Assignment 3 Due

Feb 24 RGL: 5: **Intro to Vegetation Inventory**

Assignment 4 Due

March 3 RGL: 6: **Vegetation Inventory Reprise**

March 10 RGL: 7: **Intro to Faunal Surveys**

Assignment 5 Due

March 17 Spring Break

March 24 HJA

March 31 HJA

April 7 HJA

April 14 HJA

April 21 HJA

April 28 HJA

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Field Course - May 15-19, 2023

Course Objectives: Students are immersed the Kitattiny Ridge and Valley to learn fundamental aspects of forestry, field ecology, wildlife biology, field data collection, and natural resource management.

Instructor:
Prof. Rick Lathrop lathrop@crssa.rutgers.edu 908 229 1779

Field Course Schedule: Ridge and Valley Forested Uplands

Monday May 15
Meet at Shoprite parking lot in Newton Rote 206 North at 8:30 am.
Arrive and get settled at Cook 4H Camp Stokes State Forest
PM Pacing and Compass Orienteering
Evening Night Hike: Night hike around Lake Shawanni

Tuesday May 16
7 AM Breeding Bird Survey – Group 1
8 AM Breakfast
9AM Fixed Radius Plot Sampling:
-Red Pine Stand
-Natural Forest Stand
PM Fixed Radius Plot Sampling:
Evening Vernal Pool Amphibian Survey

Wednesday May 17
7 AM Breeding Bird Survey – Group 2
8 AM Breakfast
9AM Variable Plot Radius Sampling
-- Red Pine Stand
-- Natural Forest Stand
PM Work up the Data
Evening Present Results – Forest Stand Inventory Techniques

Thursday May 18
8 AM Breakfast
9AM Forest Landscape/Vegetation Gradient Sampling Problem
PM Work up the Data – Present Results Landscape Gradient
Evening: Barbeque and Campfire

Friday May 19
8 AM Breakfast
AM Kittatiny Ridge Hike: Tilman's Ravine
PM Head for Home for weekend

Field Course Schedule: Pinelands

Sunday May 21

Arrive and get settled at RU Marine Field Station Dorms, Tuckerton

Monday May 22

AM

PM

Evening

Tuesday May 23

AM

PM

Evening

Wednesday May 24

AM

PM

Evening

Thursday May 25

AM

PM

Evening

Friday May 26

AM

PM Head Home

Ecology Field Techniques Equipment List

Clothing
___ Hiking boots – well broken-in
___ Knee-length Rubber field boots
___ Sneakers or sandals for in camp
___ Rain gear - top and bottom – or poncho
___ Lighter weight jacket – it can get cold in Stokes in May
___ Extra top layers - wool/fleece sweater, turtleneck
___ Short sleeve shirts
___ Light weight long sleeve shirt – for sun and bug protection
___ Heavyweight field pants (1 pr)
___ Lighter weight (zip-off) pants (1 pr)
___ Shorts
___ Underwear - your choice
___ Cap or brimmed hat – for sun protection
___ Sunglasses
___ Thick outer socks - several pairs (1 for each day)
___ Thinner inner socks - several pairs
___ Various and sundry toiletries: sunscreen, bug repellant
___ Towel
Gear
___ Duffel bag to carry all this gear in
___ Large daypack for daytrips
___ 3 season sleeping bag (bedding not provided) - it can get cold in Stokes
___ Short pad for sitting/lounging
___ Flashlight or headlamp
___ Orienteering Compass
___ Survival/First Aid Kit: matches/pen knife/whistle
___ 2 refillable water bottles
___ Calculator
___ Clipboard
___ Field Journal with pens, pencils, tape
___ Laptop
___ Binoculars (optional)
___Camera (optional)

___ Entertainment: Games, musical instrument
___ Duct tape & insect repellant for tick prevention

Instructor Notes:

Week 1:

Mapping and Vegetation/Wildlife Inventory Methods labs (during semester)- 25 pts

Red Pine Stand Inventory - 25 pts

- Generate size distribution, height, canopy cover, estimate basal area, biomass and carbon stock

Natural Forest Stand Inventory lab - 25 pt

- Generate species list, inventory overstory and understory, measure dead and down; estimate carbon stocks

Resources: https://www.nrs.fs.fed.us/carbon/tools/

https://www.nrs.fs.fed.us/carbon/local-resources/downloads/Field_manual_1pager.pdf

Forest Landscape Gradient Problem write-up - 25 pts

- Transect sampling to examine tree species changes across a landscape gradient