

Fall 2019
PGEOG 38367/PGEOG 70467- Field Ecology of NYC
Mondays 1:10-4:00 PM
HN 1028
Revised 09/03/2019

Instructor: Dr. Andrew Reinmann
Office Hours: Mondays 11 a.m.-12:30 p.m.* HN 1039
Also, by appointment at the [CUNY Advanced Science Research Center](#) (85 St. Nicholas Terrace, New York, NY, [5th Floor - Environmental Sciences Initiative](#))
*Time might vary on days with a field trip
Email: Andrew.Reinmann@asrc.cuny.edu (Best method of contact) When emailing, you should include the course number in the subject heading and be sure to sign your name as it appears in CUNYfirst. Every attempt will be made to respond to emails in a timely manner. In general, emails received between 9 a.m. and 5 p.m. on normal workdays will be responded to on the same day, but emails received after 5 p.m. may not receive a response until the following day.

Course Overview

In this course you will be introduced to field-based approaches to studying ecology using the environs of NYC as our classroom to learn about (1) the region's natural history and how humans have altered it while (2) also exploring fundamental ecological concepts and processes. Despite the strong hand humans have had in shaping the landscape of NYC in recent centuries nature still abounds and through a combination of lectures and field trips we will familiarize ourselves with the city's anthropogenic and remnant "natural" ecosystems. You will get hands-on experience identifying plant species and will learn to use field guides and sensorial skills such as sight, smell and touch to aid in the identification process. You will also learn to measure ecosystem composition and structure and gain experience using state-of-the-art instruments to measure ecosystem processes. Collectively, the coursework and assignments for this class will be geared towards enhancing understanding and appreciation of the ecosystems around us, while advancing ability to develop field experiments to answer ecological questions and write scientific papers. While this course will include traditional lectures, we will spend most of our time outdoors exploring local parks and green spaces, honing our natural history skills, being inquisitive, and measuring ecosystem structure and function. If you have any questions about the format of this course please contact me, Professor Andrew Reinmann. To the extent possible, accommodations will be made to make this course accessible to students of all physical levels. If you have any concerns about the extent to which a physical limitation might impede participation in the course I encourage you to contact the me.

Expected Learning Outcomes

1. Identification of local plants and animals
2. Identification of ecosystem types
3. Working knowledge of “ecosystem forensics”
4. Perform vegetation surveys of an ecosystem
5. Perform data analysis and interpretation of ecological data

Prerequisites

Students must have passed at least one 100-level science course, or have permission from the instructor. **Familiarity with Microsoft Word, Excel, and Powerpoint is assumed (contact Professor Reinmann before enrolling in the course if do not have working knowledge of these programs)**. Because of the nature of this course you must be comfortable being outside for several hours at a time and it is strongly recommended that you come to each class with appropriate shoes and clothing. With the exception of dangerous conditions, **field trips will occur rain or shine**. Contact the instructor with any questions.

Required Texts

Sanderson EW. 2009. *Manhatta: a natural history of New York City*, [ISBN 978-1-4197-0748-3], Harry N. Abrams, Inc. **(Textbook will be on reserve in the Hunter Library)**

Del Tredici, P. 2010. *Wild urban plants of the Northeast: a field guide*, [ISBN 978-0-8014-7458-3], Cornell University Press. **(Textbook will be on reserve in the Hunter Library)**

Wheater CP, Bell JR and Cook PA. 2011. *Practical field ecology: a project guide*, [ISBN: 978-0-470-69428-2], Wiley. **(Electronic version is available for download through the library)**

Classroom Policies

You are expected to turn in all assignments at the start of class and complete each reading before class on that date. Except when relevant to coursework, no electronic devices (e.g., phones, tablets, laptops, etc.) are to be used in class.

Attendance

Hands-on learning is the primary focus of this course. Therefore, field trips will be the source of much of the information you will be expected to learn. If you miss a class, it is your responsibility to meet with other students in the class to get caught up. Further, you need to be on time for all field trips otherwise you might not be able to find the group once we start walking.

Grades

Grades are based on one field exam, one practical exam, one final exam, two field reports, one natural history presentation, one group research report, and class participation.

Additional requirements for graduate students:

- *Different exam and assignment formats and grading criteria*

- A peer-review assignment related to the group research report
- Half of the class participation grade will be based on a brief field ecology lesson to the rest of the class that will occur during one of our field trips.

Note: For ALL students, assignments that are turned in late will be penalized as follows: <24 hours = -5%; 24-48 hours = -15%; -5% for each day late after that (e.g., 48-72 hrs late = -20%, 72-96 hrs late = -25%, etc.).

Exams	40%
Field	10%
Practical	10%
Final	20%
Field Reports	15%
Presentation	10%
Research Report	20%
Class Participation	15%

Lectures/Field Trips

Class will meet once per week. Classes with a formal lecture format will meet in the assigned classroom. Depending on the field trip, we will meet either in the assigned classroom or at the location of the field trip; details will be given ahead of time. **You should plan to bring your copy of Del Tredici (2010) on all field trips.**

Weekend Field Trip

In addition to our weekly meeting, there will be a field trip to Black Rock Forest (<http://blackrockforest.org/>) in Cornwall, NY that is strongly encouraged and contains information that students will be tested on. This field trip will provide you with the opportunity to contrast the ecosystems we explore in NYC with a rural forest ecosystem and learn about the studies being conducted at this research forest. Further, during this field trip you will learn how to collect and process tree cores, which will be used for our dendrochronology lesson later in the semester. **The date of this field trip is 10/5 – 10/6.** Transportation, lodging, dinner and breakfast will be covered. Any student who has concerns or questions about the field trip or is unsure they will be able to attend should meet with me **before September 13th.**

Exams

The field exam is based on the content of field trips with an emphasis on vegetation and ecosystem identification. The practical examination focuses on field measurement methods and theory. The final exam is comprehensive and will be based on field trips, lectures, readings, and natural history presentations given by each of you. Exams will begin at the start of class and if you arrive late you will have less time to complete the exam. Because the field exam will take place while on a field trip, tardiness may prevent you from being able to take the exam. A missed exam will be graded as a zero and make-up exams will ONLY be available in the case of a documented unavoidable circumstance that results in an excused absence.

Field Reports

Field reports are short written reports that are generally based on questions given to you at the start of each field trip. They may also require you to photograph or collect plant specimens and/or visit parks near your home outside of class time. While students can work together during class, reports are expected to be done independently and turned in at the start of class on their respective due dates.

Natural History Presentation

Over the course of the semester you are expected to research an aspect of NYC natural history, for which you get prior approval from the instructor, and provide a 5-minute PowerPoint presentation to the class at the end of the semester. In addition, you will need to prepare an abstract (300-word limit) describing the content of your presentation. You will not be given credit for this presentation if the topic did not receive prior approval from the instructor. You will also be required to turn in the slides used for your presentation. You need to use at least 5 peer-reviewed scientific papers as sources of information for your presentation (see format below). In addition to these 5 papers, you may use reliable websites for information (e.g., government agencies, universities, etc.), but double check with me before you use a website as many can be unreliable.

Group Research Report

You will work in groups of 4-5 to research the ecology and ecosystem services of a specific local ecosystem (e.g., forest, grassland, marsh, etc.). Each group will be required to turn in a report following the format of a scientific research paper and provide a presentation to the class. During class we will discuss this assignment in greater detail as well as how to write a scientific paper. You will also be required to turn in the slides used for your presentation. You need to use at least 10 peer-reviewed scientific papers as sources of information for your presentation (see format below). Graduate students will be expected to integrate data (e.g., from field trips, Black Rock Forest website, etc.) into their report and, to the extent possible, make the report relevant to each student's area of study.

Required citation format:

Internally:

One author: "The sky is blue (Smith, 1997)."

More than 2 authors: "The sky is blue (Smith et al., 1997)."

Literature cited section:

One author: Smith AS. 1997. Detailed study of sky color. *Journal of Obvious Things* 3: 122-126. (note that the volume AND page numbers are included and that the journal title is in italics)

Multiple authors: Smith AS, Rogers LM, White SD. 1997. Detailed study of sky color. *Journal of Obvious Things* 3: 122-126.

Syllabus Change Policy

Except for changes that substantially affect implementation of the evaluation (i.e. grading) statement, this syllabus is a guide for the course and is subject to change with advance

notice. Any changes to the syllabus will be posted to Blackboard and the instructor will bring changes to the students' attention in class.

Incomplete Policy

I do not give Incomplete (INC) as a final course grade except under extreme and documented circumstances. In order to receive an INC you must be doing passing work at the time of the final exam. Undergraduate students must notify me within 48 hours of the scheduled final exam and also make arrangements with me to complete a Contract to Resolve an Incomplete Grade in which we will establish a deadline for completing missed work and/or examinations. This contract must be completed **prior to final grade submissions**. Graduate students must request the INC within 48 hours of the scheduled final exam. In either case if I do not hear from you within the specified time period I will average your grades and record them.

Hunter College Policy on Academic Integrity

Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

Hunter College Policy on Sexual Misconduct

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College affirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationship. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

- a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, on contacting the College's Public Safety Office (212-772-4444)
- b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) of Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link:

<http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf>

Hunter College ADA Policy

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring education parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical,

Syllabus Revised: 8/30/19

Physical, and/or Learning) consult the Office of AccessABILITY, located in Room E1214B, to secure necessary accommodations. For further information and assistance, please call: (212) 772-4857 or (212) 650-3230.

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Tentative Schedule for Fall 2019**

Week	Date	Assignment	Topic	Readings
Section I: NYC Natural History				
1	Sept 5		MONDAY SCHEDULE: Overview of the discipline of field ecology and NYC Ecosystems	Del Tredici p. 1-26; Sanderson Ch. 1
2	Sept 9		Succession, Cliffs, Canyons, Grasslands and Forests*	Sanderson Ch. 5; ESA Online Reading
3	Sept 16	Field Report #1 Due	The Primeval Forest*	NYT Article; Wirth et al. p. 11-33
4	Sept 23		Exam 1: Vegetation and Ecosystem Identification Wildlife ID and Observation*	Wheater Ch. 4 (p. 95-108, p. 200-234)
Section II: Measuring Ecosystems				
5	Oct 5 & 6		BLACK ROCK FOREST FIELD TRIP	
5	Oct 7	Nat History Proj. Topic Approval Form Due 5 pm	Ecological Processes & Measurement	Sanderson Ch. 6 Wheater et al. Ch. 1 & 2
6	Oct 16		MONDAY SCHEDULE: Carbon Cycle I: Photosynthesis and Respiration*	Wheater et al. Ch. 3; Battles Online Reading
7	Oct 21		Carbon Cycle II: Biomass and Ecosystem Structure/Wetland Ecology and Ecosystem Restoration*	Wheater et al. Ch. 3;
10	Oct 28		Dendrochronology: Using tree cores to recreate the past	Reinmann et al. 2019; Briber et al. 2015
9	Nov 4	Field Report #2 Due midnight	Phenology & Fall Colors*	Archetti et al. 2009
8	Nov 11		How to Write a Scientific Paper*	Wheater et al. 6 (p. 305-321)
11	Nov 18		Exam 2: Practical	
12	Nov 25	Abstracts due by 5pm on Sunday, Nov 24	Natural History Presentations	
Section III: Natural History Reports				
12	Dec 2		Natural History Presentations	
14	Dec 9	Research Report Due midnight	Group Presentations & Manahatta	Sanderson Ch. 3 & 7
15	Dec 16		Final Exam (Covers Entire Semester) 1:10-3:10	

* Indicates Field Trip; Blue font = dates of exams and due dates of assignments