ECOLOGICAL FIELD METHODS (BIOL-UA 16)
PROFESSOR KATIE SCHNEIDER
THURS 12:30 – 3 (SILVER 604)
SYLLABUS FALL 2013

CONTACT INFORMATION FOR DR. SCHNEIDER:
   Email: ks146@nyu.edu
   Phone: 212-992-9669 (x29669 from a campus phone)
   Office hours: Tuesday 11 - 12 (Silver 602) and by appointment

PREREQUISITES:  Principles of Biology I (BIOL-UA 0011, 9011 or 0013) or Foundations of Science 6: Biology (SCIEN-AD 113) & Principles of Biology II (BIOL-UA 0012), or Principles of Biology II (BIOL-UA 0014 or 9012), or Environmental Systems Science (ENVST-UA 100) or Foundations of Science 6: Physics (SCIEN-AD 114) & BIOL UA-63 (may be taken concurrently).

COURSE DESCRIPTION:  The main objective of this course is to provide you with the skills needed to design and implement field experiments, interpret data and present ecological research. While investigating real habitats, such as forests, salt marshes and urban landscapes, you will gain experience in all parts of the scientific method. Examples of data collected include spatially referenced biological surveys and measurements of abiotic parameters. Ecological techniques will be nested within greater contexts of questions in biodiversity and community structure, invasion biology, urban ecology, habitat alteration and climate change. Scientific communication skills will be strengthened through written assignments and discussion of peer-reviewed scientific literature. A significant component of this class will be an independent group research project. During approximately half of our lectures, we will be meeting at off-campus field sites. Please inform me if you need any specific accommodations to access or visit these sites. You will be responsible for your own transportation to these locations (accessible via public transportation). Some classes may run a little late or early with required travel time. We will make accommodations for students who have class either directly before or after our class time.

REQUIRED MATERIALS:  For this course, you will be expected to purchase one Rite-in-the Rain or similar waterproof notebook (you can decide if you want the spiral bound or the looseleaf type). You will also need one pair of rubber boots or waders and a pair of field pants.

You will need three identification books: birds, trees, and insects. Here are three that I recommend, but you are absolutely free to pick your own as well! Hopefully these are guides that you will keep and continue to use for years after this course so pick whichever works for you. All are available at discounted prices on websites such as amazon.

**RECOMMENDED MATERIALS:** As many of these activities will be outside, you may need to purchase field (rubber-soled) boots, poncho/raingear, hats, bug spray, sunblock, gloves, an old backpack, etc. As we will be traveling to field sites (which may be remote or wet or during inclement weather), I advise you to seek out a secure location where you can store valuables (computers, ipads, etc.) while we are in the field (or do not bring them with you to class).

**GRADING:**
The final grade for this course will be based on:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>Writing assignments</td>
<td>150 pts</td>
</tr>
<tr>
<td>Team Project Proposal Presentation (independent grade)</td>
<td>40 pts</td>
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<tr>
<td>Team Project Final Presentation (independent grade)</td>
<td>50 pts</td>
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<tr>
<td>Team Project Final Report (group grade)</td>
<td>60 pts</td>
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<tr>
<td>Participation</td>
<td>50 pts</td>
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<tr>
<td><strong>Total</strong></td>
<td>350 pts</td>
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</table>

Letter grades will be determined as follows. If you earn the following points, your grade will be at least as indicated; instructor reserves the right to “curve” the lowest grade upwards as appropriate:
- INC = Incomplete, W = Withdrawal. This scale is subject to change based on overall course performance.

If you receive an INC, you must resolve the INC before the end of the next semester or it will become an F. It is your responsibility to request an INC in writing before the end of the course.

1. **Writing Assignments**
   - There will be several writing assignments due throughout the semester. In most cases, this assignment will be based on the activity from the week(s) before. When a new topic is introduced, you will be expected to take notes on the purpose of the activity, the methods used, and the data that you collect. After collecting your data, you will be expected to analyze and interpret your results and discuss your findings. For some assignments, you will need to discuss the activity in the context of outside scientific sources. We will discuss these assignments at the beginning of the lecture on the day that they are due. As such, late assignments will NOT be accepted. If you must miss class due to a personal emergency or medical issue, you can email your assignment prior to the start of class.

2. **Team Project**
   - There will be one significant team project in this course. You will have time during the course to work on this project and talk with myself and your classmates, but you will spend a significant amount of time outside of class meeting with your team to design and implement your study. You will all be expected to contribute equally to this assignment, and your contribution will be reflected in your grade. Midway through the semester, each team will give a brief powerpoint presentation describing their project. Each team member will be expected to speak and contribute to the construction of the powerpoint. Every member of the class will be expected to provide feedback for each team. On the last day of class, each team will present their findings to the class. The team will also turn in a written report of their study in the format of a scientific paper.
3. Participation

- Attendance in this course is mandatory. You must come to each class prepared and plan to stay the entire time. During weeks that we will be meeting at an off-campus site, you are responsible for your own transportation (public transportation is available). You must arrive to the site on time, prepared (notebook/pencils, etc.) and dressed accordingly (more on this below). Missing class is strongly discouraged as most classes will be group work and not be able to be made-up independently.

Policies:

1. This course will meet both in the laboratory and the field. Students must adhere to proper safety guidelines:
   a. In the laboratory classroom: You must wear long pants, closed toed shoes and follow lab safety rules. There will be no eating or drinking in the lab room. Even when we are not working with hazardous chemicals, this lab is actively used for other courses, and you should wash your hands prior to exiting the room every time.
   b. In the field: We will be spending a significant amount of time outside in different field sites. We will discuss each trip prior to our visit, but general guidelines apply. These guidelines will be discussed for your safety and based on the permits for each of the field sites. If you fail to recognize these guidelines, you may be asked to leave the site, which will result in a zero for participation and the associated writing assignment. For each trip, you should bring sunscreen/hat, bug spray, long pants, comfortable walking shoes or boots, etc.

2. All students must adhere to the academic integrity policies of NYU (more on this below).

Students with Disabilities:
If you are a student with a physical, psychological, medical, or learning disability that may impact your course work, please contact The Moses Center for Students with Disabilities, 726 Broadway, 2nd Floor, 212-998-4980 (http://www.nyu.edu/life/safety-health-andwellness/students-with-disabilities.html). They will determine with you what accommodations, if any, are necessary and appropriate. All communication is confidential.

Academic Integrity Statement:
CAS Academic Policies (From http://cas.nyu.edu/page/academicintegrity):

I. A Community of the Mind
The College is a "community of the mind." Its students, faculty, and staff all share the goal of pursuing truth through free and open inquiry, and we support one another's endeavors in this regard. As in any community, membership comes with certain rights and responsibilities. Foremost among these is academic integrity. Cheating on an exam, falsifying data, or having someone else write a paper undermines others who are "doing it on their own"; it makes it difficult or impossible to assess fairly a student's interest, aptitude, and achievement; and it diminishes the cheater, depriving him/her of an education. Most importantly, academic dishonesty is a violation of the very principles upon which the academy is founded. Thus, when students enter the College, one of the
first things that they are asked to do is to sign a community compact, recognizing these principles of academic integrity. For this reason also, violations of these principles are treated with the utmost seriousness.

II. SOME GUIDELINES
Academic honesty means that the work you submit - in whatever form - is original. Students are expected - often required - to build their work on that of other people, just as professional researchers and writers do. Giving credit to someone whose work has helped you is expected; in fact, not to give such credit is a crime. Plagiarism is the severest form of academic fraud. Plagiarism is theft. Obviously, bringing answers into an examination or copying all or part of a paper straight from a book, the Internet, or a fellow student is a violation of this principle. But there are other forms of cheating or plagiarizing which are just as serious, for example:

- presenting an oral report drawn without attribution from other sources (oral or written);
- writing a paragraph which, despite being in different words, expresses someone else's idea without a reference to the source of the idea;
- submitting essentially the same paper in two different courses (unless both instructors have given their permission in advance);
- giving or receiving help on a take-home examination or quiz unless expressly permitted by the instructor (as in collaborative projects);
- presenting as your own a phrase, sentence, or passage from another writer's work without using quotation marks;
- presenting as your own facts, ideas, or written text gathered or downloaded from the Internet;
- submitting another student's work with your name on it;
- purchasing a paper or "research" from a term paper mill;
- "collaborating" between two or more students who then submit the same paper under their individual names.

Term paper mills (web sites and businesses set up to sell papers to students) often claim they are merely offering "information" or "research" to students and that this service is acceptable and allowed throughout the university. THIS IS ABSOLUTELY UNTRUE. If you buy and submit "research," drafts, summaries, abstracts, or final versions of a paper, you are committing plagiarism and are subject to stringent disciplinary action. Since plagiarism is a matter of fact and not intention, it is crucial that you acknowledge every source accurately and completely. If you quote anything from a source, use quotation marks and take down the page number of the quotation to use in your footnote.

When in doubt about whether your acknowledgment is proper and adequate, consult your instructor. Show the instructor your sources and a draft of the paper in which you are using them. The obligation to demonstrate that work is your own rests with you, the student. You are responsible for providing sources, copies of your work, or verification of the date work was completed. While all this looks like a lot to remember, all you need to do is to give credit where it is due, take credit only for your original ideas, and ask your instructor or adviser when in doubt.
Consult the APA, MLA, or Chicago style guides for accepted forms of documentation. You can access these resources, as well as additional information on proper citations on the NYU Libraries Citation Style Guide.

III. PROCEDURES AND SANCTIONS
The penalty for academic dishonesty is severe. The following are the procedures as approved by the Faculty of Arts and Science. See also the College Bulletin.

1. If a student cheats on an examination or in laboratory work or engages in plagiarism, appropriate disciplinary action should be taken. The Department can take the following actions:
   a) The faculty member, with the approval of the Director of Undergraduate Studies (Director), may reduce the student's grade or give the student an F in the course.
   b) If after lowering the grade or assigning an F the department believes a more severe penalty (i.e., probation, suspension, expulsion) is warranted, it can refer the case to the Dean or his/her representative (Associate Dean for Students) for further action.

2. In all cases of either (a) or (b), the Director shall inform the Department Chair of any action in writing and send copies of this letter to the Dean and to the student. The letter shall include the nature of the offense, the penalty, and the right of the student to appeal such penalty. A copy of the letter shall be kept in a confidential chairman's file and not in the student's departmental file. The Dean's office copy shall also be kept in a confidential file.
   (The Professor and/or the Director is encouraged to meet with the student and discuss the nature of the offense and the action taken.)

3. For cases involving a first offense at New York University, the Dean shall send the student by registered mail a notice that a second offense will result in a one-semester suspension, or a more severe penalty. (The student is also called in to discuss the offense, and review the consequences of the disciplinary action.)

4. For cases involving a second offense, the Dean shall proceed as follows:
   a) Upon receiving a second Director's letter concerning a given student, the Dean shall convene a three-member ad hoc committee, with no member being from the department involved, to examine the evidence. This ad hoc committee shall consider if there are reasonable grounds to believe that cheating/plagiarism has occurred and if so, shall affirm the suspension penalty. It shall report its conclusion to the Dean within three business days.
   b) If the committee affirms the suspension, the Dean shall send the student by registered mail the suspension letter within two business days of receiving the report. The letter shall advise the student of his or her right to appeal. The student shall have two business days from the letter's delivery to request an appeal of the suspension as provided in Section 5 (below). The suspension shall ordinarily be stayed during the pendency of appeal.
   c) If the committee does not affirm the suspension, the report shall be kept on file for a one-year period.

5. The student in all cases has the right to appeal to the Dean. In the event of an appeal, the Dean shall elicit a written complaint from the faculty member and proceed as described above.
<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topic (Intro to Ecology)</th>
<th>Field Topic</th>
<th>Location</th>
<th>Assignment Due</th>
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</thead>
<tbody>
<tr>
<td>1: 9/05</td>
<td>Introduction to Ecology, Course expectations, Climate</td>
<td>Introduction to the course; lab safety Field guides, keys, and GPS Tree identification, Define Groups</td>
<td>Silver 604 Washington Sq Park</td>
<td>Nothing</td>
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<tr>
<td>2: 9/12</td>
<td>Terrestrial and Aquatic Biomes</td>
<td>Bird identification; Survey methods</td>
<td>Central Park</td>
<td>Tree Lab</td>
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<tr>
<td>3: 9/19</td>
<td>Brief Intro to Evolution, FIELD TRIP – Jamaica Bay</td>
<td>Disturbance, Climate Change Freshwater vs. Saltwater Habitats</td>
<td>Jamaica Bay</td>
<td>Bird Lab</td>
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<tr>
<td>5: 10/3</td>
<td>Exam I Behavioral Ecology</td>
<td>Overview of statistical methods How to write a report</td>
<td>Silver 604</td>
<td>Part 2 Jamaica Bay</td>
</tr>
<tr>
<td>6: 10/10</td>
<td>Populations and Metapopulations Life tables and Demography</td>
<td>Survivorship, life tables and birds</td>
<td>Greenwood Cemetery</td>
<td>Report Jamaica Bay</td>
</tr>
<tr>
<td>7: 10/17</td>
<td>No Class Tuesday, Population dynamics</td>
<td>Time designated for group work</td>
<td>Silver 604 or your site</td>
<td>Demography Lab</td>
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<tr>
<td>8: 10/24</td>
<td>Sustainability and Harvesting Interactions: Competition and Facilitation</td>
<td>Proposal presentations/Consultations</td>
<td>Silver 604</td>
<td>Presentation</td>
</tr>
<tr>
<td>9: 10/31</td>
<td>Interactions: Herbivory and Predation Interactions: Parasitism, Disease</td>
<td>Invasive species, disturbance, Restoration</td>
<td>Central Park</td>
<td>Nothing Due</td>
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<tr>
<td>10: 11/7</td>
<td>Exam II Population Regulation</td>
<td>Urban Stream Ecology, River continuum concept</td>
<td>Bronx River Park</td>
<td>Disturbance Lab</td>
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<tr>
<td>11: 11/14</td>
<td>Species Diversity Species Richness</td>
<td>Community Ecology Aquatic decomposition and food webs</td>
<td>Bronx River Park</td>
<td>Bronx River Part 1</td>
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<td>12: 11/21</td>
<td>Community Structure Succession</td>
<td>Soil dwelling invertebrates, Terrestrial decomposition, food webs Species Accumulation Curves</td>
<td>Silver 604</td>
<td>Bronx River Part 2</td>
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<td>13:11/28</td>
<td>Productivity, food chains and energy No Class – THANKSGIVING</td>
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<td>14: 12/5</td>
<td>Global biodiversity patterns, biogeography Conservation biology</td>
<td>Bronx Data Overview</td>
<td>Silver 604</td>
<td>Terrestrial Invertebrates Due</td>
</tr>
<tr>
<td>15: 12/12</td>
<td>Global biogeochemical cycles Global climate change</td>
<td>Final Group Presentations Final Paper due</td>
<td>Silver 604</td>
<td>Final Paper and Presentations</td>
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</tbody>
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