Fall 2020

BIOL 475-H01: Ecological Field Methods

Maria Stanko

Ecological Field Methods **Biology 475**
Fridays 12:30 - 4:50pm, Central King Building 328 **Fall 2020**

Instructor: Maria Stanko
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Course website: canvas.njit.edu/
Office: CKB 340E

Office Hours: Mon 2:30-4:00, Tues 10:00-11:30. Schedule using Cisco WebEx link on left-hand menu of Canvas, or email me for an appointment at other times.

Description: Exploration of the natural systems around you inspires endless scientific questions. In this class, we'll become familiar with the types of ecosystems found in our area, learn to identify common plant and animal species, and address ecological questions employing common methods used in the collection of ecological data. In addition to field techniques, you'll learn how to design an experiment to test a scientific question, to apply different statistical tests commonly used to analyze ecological data, and to report scientific results in written and oral format. Using what you've learned throughout the semester, each student will design and carry out an independent ecological field experiment and present the results in a class research symposium at the end of the semester.

Prerequisite: BIOL 205&206 AND permission of the instructor.

Text: McMillan, V. E. 2016. Writing papers in the biological sciences. 6th ed. Bedford/St. Martin's, Boston, Massachusetts, USA. (Previous editions OK.)
You will also need to download and make an account on the **iNaturalist** app: https://www.inaturalist.org/
Additional readings: Labs will be posted on the course website (http://canvas.njit.edu). Students are required to read the posted lab description prior to attending class. Quizzes will be given at random to ensure students come to class prepared.

Converged Learning: In the Fall 2020 semester, this course will be offered in the Converged Learning format. For this field laboratory course, that will mean that some class meetings will be face-to-face (on campus) observing social distancing guidelines, and some class meetings will be held synchronously (during the scheduled class time) online. Because our in-person activities are weather-dependent, weeks listed as TBD on the schedule will be determined by the Tuesday of that week. Please refer to the Fall 2020 Instructional Delivery FAQ if you cannot or prefer not to meet in person and contact me to discuss your options.

COVID-19 Safety Requirements: All persons physically present in any department facility or classroom shall comply fully with the NJIT COVID-19 safety policy at all times. Masks must be worn before entry to all department facilities, and social distancing guidelines must be followed. Individuals who are unable to wear a face mask due to medical reasons should contact the Office of Disability Services or Human Resources. Students who enter a classroom without wearing a mask properly, or remove their mask, will be cautioned by the instructor. The same is true for students who disregard the seating order or guidelines for social distancing. Students with obvious symptoms of respiratory illness should not come to campus and will be asked to leave. Students who do not comply with a request by a department instructor to adjust their behavior, in accordance with the University Policy, will be subject to disciplinary actions. Instructors have the right to expel the student or terminate the class session at which any student fails to comply with the University Policy.

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Disability Statement: Please let me know if you need accommodations for a disability. If you are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director of the Office of Accessibility Resources & Services (OARS), to discuss your specific needs: https://www.njit.edu/studentsuccess/accessibility

Academic Dishonesty: Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf. Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu.

Writing Intensive/Honors: This NJIT honors course fulfills the Rutgers writing intensive requirement. We will emphasize scientific writing throughout the semester through reading of primary scientific literature, composition of weekly article summaries, and the development and writing of a scientific paper describing your own research project. Writing assignments associated with this goal include:

a. Article Summaries – For article summary assignments, you will be asked to research and choose a scientific article relevant to the subject for the week, read it thoroughly, and write a one-page summary of the article (more detailed instructions will be given in class). Your goal is to concisely convey what scientific question was addressed in the paper, why that question was of interest, how the experiment was conducted, what was found, and what the results mean. I will provide feedback on each summary that you should use to improve your writing on future summaries.

b. Final Paper – You will write a final paper in the format of a scientific journal article describing your own independent research project (more detailed instructions will be given in class). In addition to feedback on your research question and experimental design, I will provide critical comments on your writing as you work on your final paper. A complete draft of the paper is due prior to the final due date. I will provide extensive comments on your draft which you should incorporate into your revisions. Only the final version of the paper will be graded, though submission of incomplete drafts will result in penalty to your grade.

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Grading: Grades will be assigned based on the percentage of points you earn out of the total possible, following the standard grade scale. Please note that the number of assignments and article summaries is estimated and may vary, affecting final total possible points.

Participation	45
5 Quizzes (5 points each)	25
8 Lab Homework Assignments (15 points each)	120
3 Article Summaries (15 points each)	45
1 Oral Presentation (30 points)	30
1 Formal lab report (50 points)	50
1 Final Exam (50 points)	50
	365

Schedule: Please note that the schedule below is the proposed schedule. Check Canvas often - the exact schedule for each week be posted by the end of the day on Tuesdays.

Date	Topic	Location	Reading/ Assignments Due
Sept. 4	Field Lab 1	On campus	Introduction & Chapter 1, Writing Summaries
Sept. 11	Field Lab 2	On campus	FL 1, AS 1, Chapter 2
Sept. 18	Field Lab 3	On campus	Turbek et al. 2016, FL 2, Chapter 3
Sept. 25	Field Lab 4	TBD	AS 2, FL 3, Chapter 4
Oct. 2	Field Lab 5	TBD	FL 4, Chapter 6
Oct. 9	Field Lab 6	TBD	Chapter 10, pp. 210-217 Project proposal
Oct. 16	Field Lab 7	TBD	AS 3, Meet with Dr. Stanko
Oct. 23	Student projects!	Project location	FL 7, Chapter 7
Oct. 30	Student projects!	Project location	Chapter 8
Nov. 6	Field Lab 8	TBD	Ch. 10, pp. 191-201, Paper Draft Due!
Nov. 13	Field Lab 9	TBD	FL 8
Nov. 20	Field Lab 10	TBD	FL 9
Nov. 25 (Wed)	Paper meetings	ONLINE	FL 10, NO CLASS FRI 11/27
Dec. 4	Presentations	ONLINE	Presentation, Final paper
Dec. 15-21	Final Exam TBD*		

*Do not schedule travel during the final exam period until after the NJIT final exam schedule has been posted here: https://www.njit.edu/registrar/exams/

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Attendance, lateness, make-ups, and class policies:

- You must ensure Canvas access during the first week of class. Be sure you check the email address associated with your Canvas profile regularly.
- Absences will only be excused for valid reasons documented via the Dean's office.
- Be on time! We will not be staying in one place for on campus classes, so you need to be there when we start.
- Make up exams and quizzes will be possible only with dean's letter or with prior approval. Late assignments will be accepted, but penalized 10% of the points available for each 24-hour interval that they are late.
- The writing revision process is an important part of this course; if you do not submit a rough draft, you will automatically lose 15 out of 50 points for the paper.
- The final exam will be a cumulative, open-note, open-book online exam. Each student will take the exam completely independently during the schedule final exam time.

How to dress for class: For weeks when we meet in person, please wear comfortable shoes (sneakers are fine) and pants, and dress so that you'll be comfortable outdoors for several hours. In the absence of lightning, we may go out in the rain/snow, so please bring a raincoat or umbrella if rain is in the forecast. On snowy/wet days, your feet will be more comfortable in waterproof boots. Make sure you always bring winter hats/ coats/ gloves on cold days! Dress in layers, bring insect repellant or sunscreen if you wish, and always bring water! And don't forget your mask!

How to turn in assignments:

1. Article summaries: upload to Canvas via the link for the assignment. Don't forget the citation!
2. Field lab analysis assignments: Upload two files to Canvas via the links: A) Your Excel file with your completed analysis.
   B) A document with answers to the questions in the assignment, including a figure if part of the assignment. Remember that all figures must have labeled axes and a figure caption!

Learning outcomes: Students are able to….

1. Describe the types of ecosystems found in our area.
2. Identify common plant and animal species found in local ecosystems.
3. Research topics using electronic and print sources and attribute sources properly.
4. Design and carry out an experiment to test an ecological question.
5. Apply different statistical tests commonly used to analyze ecological data.
6. Communicate scientific results in written and oral format.