

Field & Lab Methods in Plant Biology & Conservation



PBC 450: Team-taught, Course Coordinator: Nyree Zerega

Fall 2020: Synchronous (MW 9am – 1pm) and asynchronous content (see scheduled below for details)

Course Goals:

- To familiarize students with a wide range of methodological approaches used frequently in plant biology and conservation research
- To give students hands-on experience with a variety of field and laboratory methods used in plant biology and conservation research
- Students should complete the course feeling confident in their ability to select and implement the appropriate methods to address a variety of research questions

Course Description

For fall 2020, we will offer students the option for taking the course fully remotely or as a hybrid remote and in-person course. Much of the course will be delivered only remotely, and for the optional in-person components, students can decide on a case by case basis if they will participate. Given the growing season in the Chicago area, the first half of the quarter will focus on field methods whereas the latter half will focus on lab methods. There is no text for this course. Rather, for each topic, students will be given background reading material that will be available on the Northwestern Course Platform, Canvas. Given the breadth of topics to be covered in this course, it is team taught in order to draw upon the expertise of various faculty. Students will be graded based on participation, section assignments, and a final written and oral project. For the project, students will develop a hypothesis and write and present a research proposal. Specific project guidelines and expectations will be given during the quarter.

Notice about Recording of Classes

This class or portions of this class will be recorded by the instructor for educational purposes. These recordings will be shared only with students enrolled in the course and will be deleted at the end of the Spring Quarter. I will communicate how you can access the recordings. Unauthorized student recording of class sessions is prohibited, and faculty should not permit individual students to record class sessions for any reason. Please direct requests related to accommodations to [AccessibleNU](#). Unauthorized student recording of classroom or other academic activities (including advising sessions or office hours) is prohibited. Unauthorized recording is unethical and may also be a violation of University policy and state law. Students requesting the use of assistive technology as an accommodation should contact [AccessibleNU](#). Unauthorized use of classroom recordings — including distributing or posting them — is also prohibited. Under the University's Copyright Policy, faculty own the copyright to instructional materials — including those resources created specifically for the purposes of instruction, such as syllabi, lectures and lecture notes, and presentations. Students cannot copy, reproduce, display or distribute these materials. Students who engage in unauthorized recording, unauthorized use of a recording or unauthorized distribution of instructional materials will be referred to the appropriate University office for follow-up.

Remote Classroom Expectations

- Students will provide their preferred name and pronouns in the name field.
- Students will have their video on during synchronous class discussions to facilitate engagement and understanding. If your internet connectivity is poor or you have other difficulties/challenges, turning off your camera is permissible.
- Each synchronous session, I will ask for a student volunteer to monitor the chat and bring questions/comments to my attention.
- Synchronous classes indicated with an asterisk in the table below will be recorded and available on Canvas for students unable to attend synchronous sessions.
- Private chat will be disabled.
- Behaviour on Zoom sessions should be of the same standard as expected for in-person instruction and consistent with [NU's Community Standards](#).

Diversity Statement. The instructors in this course are committed to diversity and equity whereby barriers are removed to create space for all individuals to fully engage in all areas of campus life. Each student's voice has something of value to contribute and students are therefore encouraged to communicate and participate during class meetings. We must take care to respect the individual backgrounds, personal identities, intellectual approaches, and demographics expressed by everyone. Individual differences deepen our understanding of one another and the world around us thus making us global citizens. We adhere to the Northwestern University [non-discrimination policy](#): and reserve our classroom as a safe space for unique and meaningful dialogue. Remember to keep confidential all issues of a personal or professional nature that are discussed in class.

Academic Integrity information can be found here <https://www.weinberg.northwestern.edu/undergraduate/courses-registration-grades/integrity/>

Assignments. As the nature of the activities in this class are variable, so too are the assignments for each topic. For topics that span more than one class period, there may only be one assignment due after the topic has been completed. Instructors will lay out expectations for assignments for their sections and this information will be available in Canvas. Assignments should be uploaded on Canvas, unless other instructions are specifically given.

Written Grant Proposal and Oral Presentation. Each student will come up with a research project and prepare a written proposal for that project. This will be covered in the Grant writing sections. Emphasis will be on placing the research in a broad context, developing a solid introduction to the topic with relevant background information and appropriate methods. A draft outline will be due Nov. 1, and the final written proposal will be due on Dec. 3. On Dec. 7 students will present their proposals in a speed talk. Specific details for the that will be covered in the Science Communication section.

Late Assignment Policy: Assignments should be uploaded by midnight of the due date (unless otherwise instructed). You should expect to have the graded assignment returned to you within a week. For assignments that are not turned in by the due date, 5% will be deducted per day it is late. If you think you have a valid reason for turning in an assignment late, let the instructors know. COMPUTER CRASHES ARE NOT LEGITIMATE REASONS for late work as you should all be in the practice of backing up data and documents on a regular basis.

Accessible NU: Northwestern University is committed to providing the most accessible learning environment as possible for students with disabilities. Should you anticipate or experience disability-related barriers in the academic setting, please contact AccessibleNU to move forward with the university's established accommodation process (e: accessiblenu@northwestern.edu; p: 847-467-5530). If you already have established accommodations with AccessibleNU, please let me know as soon as possible, preferably within the first two weeks of the term, so we can work together to implement your disability accommodations. Disability information, including academic accommodations as part of a student's educational record, is confidential under FERPA regulations.

Resources for Students

There are a variety of University resources available to students regarding remote teaching and beyond. These resources include academic advising, career services, Counseling and Psychological Services and the Health Service. Read more about resources for students [here](#). We appreciate your collective dedication to our core mission during these times of uncertainty. The university will continue to communicate updates as they are available. Please visit the [University's COVID-19 website](#) as the main source of University information, updates, FAQs and resources as this dynamic situation unfolds.

SCHEDULE

All synchronous meeting times are 9am – 1pm unless otherwise noted. There will be breaks during this 4 hour period. All times are CST.

Date (2020)	Topic	Readings/Videos to view before class	Instructor	Synchronous Remote Meeting	In-person delivery (always optional)	Assignment (details will be given by section instructors)	Due Date	Office Hours
Wed 9/16	Sci. Method/Repro bio	See Canvas	Skogen/ Fant	Synchronous *	None	1. Abstract 2. Video	9/22	
Mon 9/21	Land History & Restoration	See Canvas	Barak	Synchronous*	None	Writing response	9/29	
Wed 9/23	Hypotheses to methods/ Floral traits	See Canvas	Skogen/ Fant	Synchronous*	None	-		
Mon 9/28	Field trip: dune restoration	See Canvas for directions	Iler	Visit will be recorded	Sign up for either 9am or 11 am tour of Montrose Beach	-		
Wed 9/30	Reproductive biology	See Canvas	Skogen/ Fant	Synchronous*	None	Hypothesis/method/ results	10/6	
Mon 10/5	Grant writing/ Plant ID	See Canvas	Skogen/ Zerega	9-10:30am: Synchronous grant writing* 11am: Asynchronous fieldwork assignment if not doing in-person option	11am: staggered in-person plant ID activities at lighthouse beach	1. Grant project outline 2. Morphology bingo/iNaturalist	1. 10/15 2. 10/13	
Wed 10/7	Community sampling	See Canvas	Iler	9-10:30am: Synchronous*	11am – fieldwork at Lighthouse beach (group 1)*	-		
Mon 10/12	Community sampling	None	Iler	None	10am – fieldwork at Lighthouse beach (group 2)*	Research report based on class data	10/22	
Wed 10/14	Seed Biology	See Canvas	Barak/ DeVitis	Asynchronous lecture videos	9am – lab germination activity at CBG Science Center (group 1) 11 am – lab germination activity at CBG science center (group 2)			
Mon 10/19	Seed Biology		Barak/ DeVitis	Asynchronous lecture videos. 12-1pm: Synchronous discussion about Seed Biology Section	9am – lab germination activity at CBG Science Center (group 3)	Hypothesis and figure from sample germination data	10/29	
Wed 10/21	Plant ID/Peer Review	See Canvas	Skogen/ Zerega	9-11am: Synchronous grant writing meeting* Noon – 1pm: Synchronous Plant ID meeting*	None	1. Peer review of draft proposals 2. Review online tools	1. 11/3 2. 11/1	
Mon 10/26	Genetic Diversity	See Canvas	Fant/ Zerega	Synchronous Zoom meeting*	None			

Wed 10/28	Genetic Diversity		Fant/ Zerega	Synchronous Zoom meeting for half of class*	1/2 of class can sign up for lab activity			
Mon 11/2	Genetic Diversity		Fant/ Zerega	Synchronous meeting for half of class*	1/2 of class can sign up for lab activity	Popular version of a science article & Figure and interpretation based on data	11/12	
Wed 11/4	Phylogenomics	See Canvas for software downloads	McDonnell	Synchronous*	None	-		11/6, 10am or by appoint ment
Mon 11/9	Phylogenomics		McDonnell	Synchronous*	None	Graphical and text abstract based on your own or sample data	11/22	11/13 10am or by appoint ment
Wed 11/11	Science communication	See Canvas	Barak	9-11am: Synchronous *	None	Speed talk to be delivered remotely	Dec. 7	
Mon 11/16	GIS	See Canvas for software downloads and readings	Taddeo	9-11am: Asynchronous lecture & practical exercise 11:30am-1pm Synchronous*	None	-		11/16, 3-4 PM
Wed 11/18	GIS		Taddeo	9-11am: Asynchronous lecture & practical exercise 11:3am-1pm Syn0chronous*	None	1) Publication ready map AND 2) fact sheet, video or podcast	11/25	11/18, 3-4 PM
Mon 11/23	Overview of major fungal groups		Mueller	Asynchronous recorded lecture	None	None		
12/3		Grant proposals due					12/3	
12/7		Class Presentations		Synchronous	None			

*synchronous meeting will be recorded for later viewing

Grading

Participation	10%
Assignments	50%
Final Paper	20%
Final Presentation	20%

Contact information for the instructors:

Course Coordinator/Instructor:	Dr. Nyree Zerega	n-zerega@northwestern.edu
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