



Plant Communities of New England, ENVS 105Z

Winter 2024, Kate Miller, PhD; kmiller02@wesleyan.edu

Synchronous online: T 1/9-M 1/22; Monday-Friday, 9:30-1:30 w/breaks, EST

Course Description

Students will become familiar with diverse plant communities of various New England ecosystems. Fundamentals of plant structure, physiology, reproduction, ecology and evolution will be applied to studies of key native species. We will also explore community interactions, the role and impact of disturbance, invasive species and strategies in conservation. Coursework will include independent field assignments. Pre-requisite: C- or better in BIOL 182, or permission of instructor. This course fulfills the Group I requirement for the biology major.

The course will provide students with foundational information traditionally associated with introductory botany courses. Specific New England plant communities and species will be cited as exemplars, with an emphasis on terrestrial angiosperms. Species and communities will generally be from four New England ecosystems of interest: Northern Mountains, Temperate Deciduous Forest (of S. New England), Atlantic Pine Barrens region (Outer Cape Cod) and natural and managed early succession habitats throughout.

While this is a lecture course, and there is no formal lab, you will still have some “field” and “lab” activities to provide hands-on observation and application of information. The focus of assessments is to help student navigate the material, master concepts and terminology, think-critically and apply information, and learn and/or use skills including plant identification, literature research, written and oral communication and collaboration. In addition to individual work, there is one group project, and group activities during class.

Course Objectives

- ☼ Describe key aspects of plant anatomy and physiology using appropriate terminology
- ☼ Identify key morphological features and other attributes to determine plant species
- ☼ Recognize different New England ecosystems and their dominant vegetation
- ☼ Explain the differences between major plant groups
- ☼ Discuss how environmental conditions and resources result in the evolution of various plant traits and community composition
- ☼ Evaluate the needs of a conservation problem and determine feasible and desirable goals and the best means to achieve them
- ☼ Develop and apply communication, collaboration, writing and observation skills

Readings and required texts and materials

Purchase two plant identification booklets (e.g., online; by end of December to ensure timely deliver).

Winter Weed Finder, Dorcas S. Miller and Ellen Amendolara, Nature Study Guild Publishers, 1989

Winter Tree Finder, May Theilgaard Watts and Tom Watts, Nature Study Guild Publishers, 1970

In addition, you will need materials for your seed germination journal – glass jar, paper towel, water, and a **magnifying glass**, at least 10x (plastic or glass, hand lens or larger). Other readings will be provided digitally on our course Moodle including textbook chapters and scientific articles; there will be at least one reading for each day, many days will have one or two more. You must have a reliable laptop and wifi access.

Schedule of Topics *Please note that there may be minor changes to specific topics.*

Class	Topic
T 1/9	Introductions & Course Overview Context: The Big Picture – Exploration of ecosystem resources and conditions that determine plant species distribution, populations, and communities; review of New England Ecoregions and the four systems of interest.
W 1/10	Overview of Plant Life Key concepts and information about plant structure, metabolism, diversity, ecology and phylogeny of major forms, as well as methods of plant identification.
TH 1/11	Plant cells and tissues What makes plant cells different from animal cells; types of growth, production and cellular division; three types of tissues and variations; primary growth; cellular adaptations to winter.
F 1/12	Plant structures and functions The basic structure and incredible adaptation and variation in form and function of leaves and roots including symbiotic relationships with Mycorrhizae and the structure of woody plants (secondary growth); fundamentals of plant reproduction
M 1/15	Physiology and interactions with environmental conditions Photosynthesis and respiration in plants; variability in and responses to light conditions; challenges in gas exchange; the movement of water; circulation within plant tissues; interaction with other environmental conditions; sequestration and production of secondary chemicals.
T 1/16	Angiosperms Form and function of flowers and exploration of angiosperm reproduction (e.g., wind vs. animal pollination); strategies and trade-offs of asexual vs. sexual reproduction; focus on native species in NE.
W 1/17	Gymnosperms, Ferns and Bryophytes Specifics of non-flowering plant reproductive strategies; evolutionary history and constraints; focus on native species in NE.
TH 1/18	Disturbance and Invasive Species Natural changes to plant species populations and communities over time (succession); the effects of natural and human-caused disturbance (e.g., fire, climate change, land management); definition and examples of NE invasive plants, their life history characteristics and impacts to other plant species.
F 1/19	Plant evolution and interactions Coevolution and plant diversification; trade-offs in strategies (e.g., specialist vs. generalist), symmetric and asymmetric networks; tri-trophic interactions; implications for conservation.
M 1/22	Plants as food and the focus of conservation Strategies in Conservation (group presentations and discussion – see project description); Ethnobotany – Plants as food as well as drugs and material, including identification of key nutrients, secondary chemicals and plant parts.

Assessments

List of assessments, point breakdown and due dates

Assessment	Points	%	Due
Reading quizzes	150	15%	Daily, 15 pts. each
Seed Study & Journal	140	14%	Begin by Jan 2; 4 entries at different stages
Glossary	100	10%	1/12, 1/17, 1/22 (by end of day)
Local Plant Identification	170	17%	Monday 1/15
Strategies in Conservation Group Presentation	170	17%	Monday 1/22 (group project / presentation)
NE Plants & Communities Paper	170	17%	Wed 1/24
Participation	100	10%	Attendance & participation each class
TOTAL	1000	100%	

Assessment Descriptions (see Course Moodle for details)

Reading Quizzes – The purpose of these quizzes is to help you focus on key terms, processes, and concepts needed to do the higher-level work of synthesis and application. They are open-book, one submission with unlimited time *and no consultation with another student*. Late submissions may earn partial credit at my discretion.

Glossary of terms – The goal of the glossary is to help you remember important terminology and explore strategies in mastering a large, new, vocabulary. Three submissions or 10 handwritten terms and definitions (your own words) each, of which 2 are with hand-drawn sketches.

Seed Study and Journal – You will germinate and observe bean seeds, documenting structural, physiological and developmental changes and interaction with the environment over time. You will submit journal entries (largely answers to prompts), photos and drawings four times at different stages.

Local Plant Identification – The purpose of this activity is to provide you with an opportunity to find and identify both woody and herbaceous plant species independently, gain familiarity with identification tools, and become familiar with plant structures used for winter identification, and specific species and communities in our area.

Strategies in Conservation – You will be given a land-management scenario to explore and address applying your knowledge of plants and conducting research to learn more about your system and possible options. You will work together with your group, meeting with the instructor as needed, and together, both in and out of class. Your product will be a class presentation that addresses the project scenario and questions with documentation of resources and participation (last class).

New England Plants & Communities – We will be exploring various plant species, as well as the ecosystems and communities in which they are found. Keeping track of these in your notes, both in class and from the reading, you will produce a summary of the four different ecosystems of special interest, including conditions and resources relevant for plant growth, dominant vegetation, and plant species identified. This will be written in science writing style, without in-text citations, but with a reference section.

Participation – Is based on attendance to all of each class (unless otherwise discussed), participation in class discussions and group work, contribution to a productive and supportive learning environment. While this is extremely unlikely, please note that behavior that is disruptive as determined by the instructor may be addressed privately, and if unaltered, may result in reduced participation points or other actions.

Other information regarding assessments

Late Submission

Unless we have discussed the reasons and conditions of a late submission, only partial/no credit will be given. Please share privately any formal accommodations. It may be considered unethical to other students to change deadlines or assignment requirements for individual students without formal accommodations, so please consider seeking those if you believe you have challenges that will make it difficult for you to participate fully and meet course requirements.

Writing

For all assignments the quality of your writing matters. Your writing needs to be grammatically correct, free of spelling errors, with well-constructed paragraphs and flow of information. Key attributes of science writing also include taking care to be concise, specific and accurate. As long as the writing is clear, you are welcome to explore and develop your own writing style.

Feedback on assignments will be primarily with regard to content, not the quality of writing. If you struggle with your writing, please contact the Writing Center in advance to determine the availability and terms of assistance.

Grades Scored Between			Letter Equivalent
98	to	100	A+
93	to	Less than 98	A
90	to	Less than 93	A-
87	to	Less than 90	B+
83	to	Less than 87	B
80	to	Less than 83	* B-
77	to	Less than 80	C+
73	to	Less than 77	C
70	to	Less than 73	C-
67	to	Less than 70	D+
63	to	Less than 67	D
60	to	Less than 63	D-
		Less than 60	F

* Passing grade for P/F

Class Culture, Interactions and Expectations

Instructor Access

You can contact me via the course Moodle or email; in addition, I am available to meet via Zoom. Given the different time zones of students, and the accelerated pace of the course I will not hold regular office hours. Rather, I will work with students to find a time for us to meet. I will be on email daily except for the weekend, when I will not be accessible for one 24-hour period.

Zoom Etiquette

This is a synchronous, remote class allowing us to use technology to be present in the class together, and do many of the things we would do if we were in-person. Here are some guidelines for attending and participating in class:

- Be ready with everything you need to join the class on time (notebook, textbook open, etc.).
- Plan to be present for the entire class, except for our scheduled break.
- Plan to turn your camera on at the start of class, and have it remain on for the majority of class including during group work.
- Be aware of your microphone. Keep it off unless you’re speaking or engaged in group work. Otherwise, the collective impact of background and incidental noises may make it difficult for everyone to hear.

- Use your full name on your Zoom account.
- Contact the instructor if you will be coming late, leaving early, cannot attend class or cannot use audio or visual for all or part of the class.
- Have windows and applications not related to class closed during the entire class period. Keep in mind you may be asked / want to share your screen at some point.
- Please put away your cell phone during class (just as you would in person!), unless you have family or other obligations.
- I may record segments of our class; please be aware of your surroundings, and consider whether or not there is anything visible that may inadvertently cause offense to another student.

Class schedule and other information

Our schedule is:

9:30-10:30, class then 10 min break

10:30-11:30, class then 10 min break

11:40-12:10, class then 30-minute lunch break

12:10-1:30, class then end

If we make any change to this it will be done with discussion, and collectively – every student must agree to any change.

This is a long class and we are biological beings! I want everyone to feel comfortable and engaged, and to that end feel free to bring a beverage, and to stand or move when you need to (as long as you're still on camera).

My goal is to work with you to help foster a class culture that supports curiosity, sharing and exploration. You can contribute to that culture through respectful communications and peer support. If any of my classroom management or feedback, or interactions with another student, are impairing your ability to learn or are in any way upsetting (regardless of good intentions), please let me know privately and individually.

In addition to the subject matter this course, like all college courses, is an opportunity to practice important skills such as communications, collaboration, and critical-thinking. Participation is an important part of your grade, and includes attendance as well as contributing to group work and asking / answering questions. We are a relatively small group, and very likely, a friendly one! If you are naturally reticent to speak up in front of others, I understand, but since this type of communication is part of a college course, it will be expected. Feel free to contact me to discuss strategies for speaking in public and navigating group activities.

Important University Information

See the Academic Calendar for information about add/drop, withdrawal and other deadlines

https://events.wesleyan.edu/events/pdf_academic_calendar?v_year_from=2022&v_year_to=2023

Accommodation Statement

Wesleyan University is committed to ensuring that all qualified students with disabilities are afforded an equal opportunity to participate in, and benefit from, its programs and services. Since accommodations may require early planning and generally are not provided retroactively, please contact Accessibility Services as soon as possible.

If you have a disability, or think that you might have a disability, please contact Accessibility Services in order to arrange an appointment to discuss your needs and the process for requesting accommodations. Accessibility Services is located in North College, rooms 021/022, or can be reached by email (accessibility@wesleyan.edu) or phone (860-685-5581).

Religious/Spiritual Observance Resources

If you anticipate that your religious/spiritual observance may conflict with academic obligations such as attending class, taking examinations, or submitting assignments, you can work directly with your professor to make reasonable arrangements. Should you require additional support or guidance, please feel free to reach out to Rabbi David Teva, Director of the Office of Religious and Spiritual Life at dleipzig@wesleyan.edu or any of the chaplains in the Office of Religious and Spiritual Life at <https://www.wesleyan.edu/orsl/index.html>.

Title IX Resources

If gender-based and/or sexual violence related trauma inhibits your ability to fully participate in class, please contact Debbie Colucci, Title IX Coordinator, at dcolucci@wesleyan.edu, or your class dean. Additionally, and if you are comfortable, you can work directly with your professor to make reasonable arrangements. You may also choose to talk with a confidential resource about all of your options for care and support. Confidential resources can be found the Office of Counseling and Psychological Services (CAPS), WesWell, and the Office for Religious and Spiritual Life.

Classroom Behavior

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity, gender expression, age, ability, and nationality. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on the student code.

Discrimination and Harassment

Wesleyan University is committed to maintaining a positive learning, working, and living environment and does not tolerate identity-based discriminatory harassment and/or sexual misconduct against students, faculty, staff, trustees, volunteers, and employees of any university contractors/agents. For purposes of this Wesleyan policy, identity refers to one's race, color, religion, national or ethnic origin, age, disability, veteran status, sexual orientation, gender, gender identity, and gender expression. The Office for Equity and Inclusion serves students, faculty, administrators and develops policies and procedures regarding issues of diversity and equal opportunity/affirmative action. Individuals who believe they have been discriminated against should contact the Office for Equity and Inclusion at 860-685-4771.

Health Accommodations

We form a community in our classroom, and we have the ability to help protect each other's health. If you feel ill, or have been exposed to someone who is ill, please take care not to expose others. This might mean

wearing a mask and refraining from eating or drinking during class, or staying home. Whether it's a cold, flu or covid, you can help reduce the number of people who get ill! If you are ill, consider testing for covid. If positive, isolate per the Wesleyan Covid Policies ([COVID-19 Information, Human Resources - Wesleyan University](#)). If you have very mild symptoms (and are covid-negative) or are healthy but are concerned that you may have been exposed to someone who was ill, please consider wearing a mask until your symptoms have resolved. Contact me with sufficient time prior to class so that we can discuss whether or not you can join the class via Zoom, and how to make up work.

Content Warning Language

I acknowledge that each of you comes to Wesleyan with your own unique life experiences. This contributes to the way you perceive various types of information. Sharing the reality of climate change and environmental injustice and degradation can be upsetting. However, we'll work through the material together, and it will include regular opportunities for discussion, sharing, and examples of solutions and positive outcomes. I will do my best to give advance warning for content I think may be particularly distressing, but you can also review readings and topics and ask me about content or tell me if there is something you need to avoid.

Wellness Statement

Students may experience stressors that can impact both their academic experience and their personal well-being. These stressors may include academic pressures, sleep problems, relationship and social concerns, and challenges associated with adjusting to school, mental health, alcohol or other drugs, identities, finances, life events or something not listed here. If you or a friend are experiencing concerns, remember that we all benefit from assistance and guidance at times. Reach out to CAPS, WesWell, visit the Resource Room to support your mental health and well-being.

Intellectual Integrity / Honor Code

All Wesleyan students are responsible for knowing and upholding the Honor Code. Feel free to contact me about any questions related to course expectations. If you have a question related specifically to the honor code, please contact Assistant Dean of Student/Director of Community Standards Kevin Butler - (kbutler@wesleyan.edu).

Detecting Plagiarism

Some assignments may be submitted to Turnitin or another plagiarism-detecting system. Assignments can be stored in these systems to prevent being plagiarized from in the future, but student authors will remain anonymous. Assignments will also be analyzed for use of auto-paraphrasing sites.

ChatGPT/AI?

**Are you using ChatGPT or other Artificial Intelligence tools to complete your coursework?
Doing so without the explicit permission of your instructor is a violation of the honor code.**

"ChatGPT (GPT--Generative Pre-trained Transformer) is a tool developed by OpenAI that is capable of producing human-like responses to prompts. This AI system is a large language model that has been trained on a dataset to interact with users in a conversational way. ChatGPT is part of the broader category of generative AI, a form of artificial intelligence that generates new content based on the data it has been trained on. The new content that is generated can be text, images, code, videos, etc." (UBC)

When you use ChatGPT/AI and other similar programs and submit that work for assessment and grading, the line between academic integrity and academic misconduct can become blurry and complicates our ability to distinguish the work that is being produced and submitted by students.

The question you should consider is: ***Is the work being submitted yours, or was it generated by artificial intelligence? If you are submitting work that is not your words or ideas...you are cheating.***

“For example, if you are taking a language class and you are using Google Translate, the tool, rather than you, is demonstrating its language skills. Remember that the instructor is attempting to help you learn the material and measure how fluent you are in another language. The instructor is not interested in measuring the language skills/fluency of the AI tool.” (UCSB)

What should you do?

- “Review your syllabus, collaboration policies, and learning objectives for the course.
- Be clear about the scope and parameters of the assignment and make sure **you** are doing the assessed work.” (UCSB)
- “Consult with the instructor to make sure you are clear about what resources can or cannot be used to complete the test/assignment, including other human and/or artificial intelligence resources. If the use of ChatGPT or other artificial intelligence tools has been approved, consult with the instructor about the limitations and how to appropriately acknowledge AI use.” (UBC)
- If the use of ChatGPT and/or generative AI tools has **not been approved** by the instructor, then don’t assume that you can use it. This behavior may be considered as prohibited and may be a violation of the Honor Code...more specifically, ***“...the presentation of words, ideas, images, data, or research that are not your original work without citation. This includes words, ideas, and images generated by artificial intelligence...”***

“The use of ChatGPT/AI or other generative AI tools does not mean that you have automatically violated the Honor Code. Your instructor will inform you if the use of artificial intelligence tools is appropriate for the course (UBC).” Some instructors will allow the use of artificial intelligence tools, and some won’t. You should not assume that you can. “It is extremely difficult to list all AI tools a student might use, so the use of a general term like...“no use of artificial intelligence” – should be sufficient to deter you from using AI or other tools without permission. If you use a tool/resource that has been prohibited OR if you use one that is not explicitly allowed, then you might be cheating.” -(UCSB)

The most important thing to remember is that – you are expected to complete the work assigned to you - Not rely on another person/tool to complete it for you. When in doubt consult your instructor, explain your process, and cite your work.

NOTE: The following language will be added to Regulation 2 of the Honor Code—(Plagiarism) and the Academic Integrity Policy that will be implemented FA23:

2. Plagiarism—the presentation of words, ideas, images, data, or research that are not your original work without citation. ***This includes words, ideas, and images generated by artificial intelligence.*** Plagiarism is more than lifting a text word-for-word, even from sources in the public domain. Paraphrasing or using any content or terms coined by others without proper acknowledgment also constitutes plagiarism.

Syllabus subject to change.